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Virginia Medical Monthly

OFFICIAL ORGAN OF THE MEDICAL SOCIETY OF VIRGINIA

Fifty-second Annual Session, Lynchburg, Va., October 18-21, 1921

VOL. 48, NO. 7
WHOLE NO. 832

RICHMOND, VA., OCTOBER, 1921

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Virginia Medical Monthly

Official Organ of the Medical Society of Virginia

VOL. 48, NO. 7. WHOLE NO. 832. RICHMOND, VA., OCTOBER, 1921. $2.00 A COPY 20 CENTS A YEAR

Original Communications

RUPTURE OF THE HEART.*

By J. S. DAVIS, M. D., University, Va.

A broken heart spells the fate of many an anguished bosom when at last forever stilled, and constitutes the designation of a large number of those lost souls with which the sombre imagination of poets has peopled the realm of the tortured shadows. Whenever pronounced in history or literature, it claims at least the passing tribute of a sigh. It is very much more common in fancy than in fact. I have seen but the one case whose striking features are the excuse for this paper. Of course, I refer to spontaneous, not traumatic, rupture. It is a relatively rare condition, if correct inferences can be drawn from a search of modern literature, for there are reports of only six cases in the index medicus since 1914, despite the horror of war. Two of these occurred in France, two in England, one in Germany, and one in this country. All were in elderly males except two—a French child with a diseased heart, and an English maiden of five years with congenital syphilis. Kroll is said to have collected three hundred and twenty-two cases in all history up to ten years ago, but eight years later these had been reduced by a critical analysis to one hundred and eleven. The condition is not listed at all in the index of monographic medicine. This rare and serious accident may be partial or complete, the former term implying laceration of the trabeculae, liberating the chordae. Complete rupture consists in a break through the total diameter of the heart wall, lacerating some fibres and separating others. The earliest recorded case is that of the Saviour, whose death upon the cross has been described in its physical aspects in a whole volume and shown to be probably due to this lesion.

The chief seat of the rupture is the anterior wall of the left ventricle, but it may occur anywhere else. In some of the apparently traumatic cases, the violence seemed to be altogether insufficient to produce so terrible a lesion, as often the overlying skin and intervening tissues were not even bruised. Shell concussion was responsible in one case, and the impact of a cork from a pop-gun in another, when rupture of the heart was found at autopsy, as the only pathological change present. The uninjured pericardium in these cases was full of blood.

Causes.—This accident never occurs in a normal organ. Fatty changes are usually present. Aneurism of the wall, or sometimes acute softening from coronary embolism, suppurative myocarditis, or gumma or parasites in the wall, may be the responsible predisposing factors. Males past sixty are the more usual victims, and some physical strain the immediate excitant, though the occurrence during sleep has been reported, and an overdose of digitalis once blamed.

Instantaneous death is the most distinctive symptom, but survival for as much as several days has been occasionally reported. A varying sense of anguish and suffocation with collapse is observed in such protracted instances, when the hemorrhage is gradual and the rent small. A rapid, feeble, and disappearing pulse is usual. Gastro-intestinal symptoms may distract attention, as will be seen in my case, where abdominal angina was recognized as the underlying condition.

The recent literature contains the following references to this accident. Parsons, in 1914, describes the case of an old man about sixty, who complained so violently of gastric symptoms that he was about to be explored surgically when sudden death forestalled the operation. On opening the distended pericardium, there was first seen a rupture in the right ventricular wall along the septum; but when this cavity was opened, a second break was found from it into the left ventricle. The presump-

*Read before the Roanoke Academy of Medicine, March 7, 1921.

tion was that the latter lesion was primary and that the great force thus introduced into the right side caused it to burst shortly afterwards. This case had never complained of any heart trouble whatever, though microscopically there was great fatty degeneration of the heart muscles. J. Anderson reports, in 1915, a case in a girl of five, already mentioned, who had congenital syphilis. She was apparently well to the day of her death, which occurred after a vomiting spell. Autopsy disclosed congenital stenosis of the coronary arteries, together with a hematoma of the heart wall, which may have been a dissecting aneurism. The rupture occurred on the anterior aspect of the left ventricle in its upper third and near the interventricular line. There was no fatty degeneration but a chronic atrophy.

In 1918, Dr. T. B. Christian's case was due to an aenemic infarct in a syphlitic man of sixty-four years, who had never had a symptom in his life. He worked up to the moment of death, which was due to lifting a heavy load. The lesion was found in the left ventricle, near the septum, and the microscopic examination showed it to be an area of necrotic tissue consequent upon arterio-sclerosis.

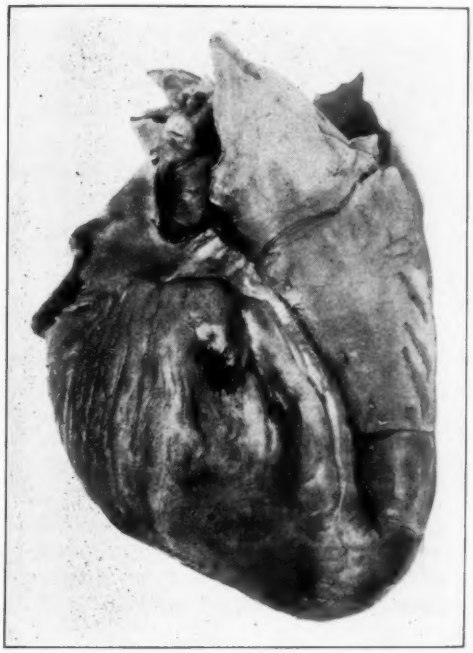
In 1919, a Vancouver preacher, fifty-eight years old, of excellent history, habits, and appearance, was a victim, according to Dr. Murphy. The premonitory symptoms were gastric with some backache. Blood pressure was 140 m.m. systolic. After two days' rest in bed, he sat up to read, when he suddenly grasped at his precordia and expired. Autopsy revealed the heart only very slightly enlarged and that confined to the left ventricle, but with a tear one and a half inches long on the anterior surface near the septum. There was only very slight fatty degeneration, and even that was not specially marked near the seat of rupture.

My case, in 1920, was that of a man sixty-one years old, who had been parted from his consort by judicial decree four years before, after a prolific marriage of thirty years' duration. There was some vague history of tuberculosis and rheumatism in his family, though his main complain was indigestion, epigastric pain, and vomiting, at varying intervals for the past four years. He had been a moderate drinker, as well as an irregular and imprudent eater. An unusually violent attack was the occasion of his presenting himself at the University of Virginia Hospital on November 19, 1920. He then described his sensations as follows: Pain began in his epigastrium, and two days before admission, some discomfort was felt over his heart. This became much worse, and radiated to the left shoulder and down the left arm. This pain became agonizing and he began to vomit. The vomitus contained only food particles. Emesis recurred several times before he reached the hospital, after which he retained nothing, and his violent efforts only produced blood stained mucus.

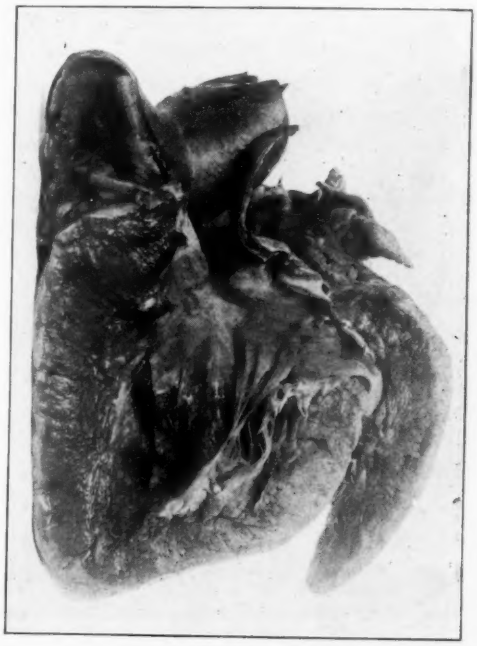
While well nourished and developed, with moist and warm skin, he appeared to be in great pain. His physical examination was largely negative, except for his heart. His abdomen was universally hypersensitive, but no explanation was found for this tenderness. His reflexes were normal. A few palpable lymphnodes were perceptible in the left cervical region. His urine contained a trace of albumen and a few hyaline and granular casts. His blood pressure was 150 m.m. systolic, and 95 m.m. diastolic. He had five million and forty thousand red cells and thirteen thousand two hundred white cells, with a slight preponderance. (72%) of pmns in his blood. His blood color was 92%. Wassermann was negative.

The cardiac impulse could neither be seen nor felt, either sitting or recumbent. The heart on percussion was not enlarged. Its apex beat was best heard in the fifth interspace, about three and three-quarter inches from the midsternal line. The tones were irregular, but no murmurs were audible, though there was an extra systole about every fourth or fifth beat. The rate was 108 per minute, the temperature 96 degrees Fahrenheit. The patient was very neurotic, moaned and lamented all the time, begging for a little sleep, which a sterile water hyperodermic finally gave him. He expressed a fear of cancer of the stomach and wanted to know the worst. The next day his temperature began to rise and his heart lost its extra systole. His painful attacks of nausea still continued, though with less violence, and he professed to feel better. On the day following this, up to his death, which occurred at noon, November 21st, his fever continued to rise until it reached 101, though his pulse fell to 96, and the cardiac irregularity

recurred. A few fine rales and some dullness at the bases of both lungs posteriorly were detected this last morning, when his leucocytes rose to 15,000. His anginal seizures continued until about noon, when the nurse, noting dyspnea and cyanosis, summoned the physician, but the end had come before the latter arrived, three minutes later.



The autopsy was performed six hours afterwards. The salient and virtually exclusive features concerned the pericardium and heart, except a slight congestion of the bases of both lungs, which might have been a beginning pneumonia, and invoked to account for the fever and increasing leucocytosis in the last hours. On opening the chest, the pericardium was markedly distended, and reached somewhat to the right of the sternum. When it was incised, a pint or more of dark unclotted blood was released. There were no signs of inflammation but a slit like perforation of the left ventricle was evident, as shown in the accompanying picture and specimen, on the posterior side. The heart was of moderate size, certainly not more than a trifle enlarged, and rather uniformly so. The sinuses of Valsalva showed no marked alteration. There was no definite narrowing of the arch of the aorta and but moderate arterio-sclerosis of it. The origin of the two coronary arteries was normal, and the left one not specially diseased anywhere, though the right showed both arterio-sclerosis and a thrombus in the branch along the posterior side of the heart. On opening the cavities, the mitral valve was obviously too widely dilated, but no changes, either vegetative or sclerotic, were found anywhere. On the posterior aspect of the heart, a longitudinal rupture from one-half to three-fourths of an inch long was found in the left ventricle very close to the septum and about the middle third of the posterior aspect. Examination from the inside revealed in the corresponding place a defect in the endocardium, which was probably one inch by half an inch in dimensions. Under this there was an opening in the myocardium through which the dull end of the dissecting forceps passed quite readily, though the orifice became distinctly smaller as the epicardium was approached. There were no blood clots or thrombi connected with it, and it had evidently not originated beneath a mural thrombus. The wall looked healthy and did not feel particularly soft to the finger or forceps. This was the only area of the kind, and there were no evidences of gumma, tubercle, or tumor formation anywhere.



Section shows on the intima a thrombus attached to the endocardium. The endocardium and edge of the heart muscle exhibited a condition of coagulation necrosis in whi h and around which were many polymorphonuclears and a moderate amount of edema. Toward the external (epicardial) aspect, some heart muscle cells were found swollen and granular, but which were evidently outside of the area of coagulation necrosis. No blood vessel was found in the section. No other findings were made which would indicate any other reason for the coagulation necrosis except infarct of the muscle.

Pathological Diagnosis.—Infarct of heart muscle with inflammatory reaction.

The striking features of this case are the advanced age, male sex, moderate blood pressure and digestive symptoms with scarcely any cardiac difficulty, and no apparently adequate exciting cause for the fatality. Several of the reported cases presented some of these features. In all but one the lesion was in the left ventricle, near the septum, and in its upper part.

The futility of treatment is obvious, but we should keep a sharp nookout in all so-called digestive disorders in elderly people, as many never complain of cardiac symptoms, and the first intimation is the final summons.

THE PRESENT STATUS OF INTRAVENOUS THERAPY.*

By ALEX. F. ROBERTSON, JR., M. D., Staunton, Va.

In recent years, intravenous therapy has come rapidly to the front in the treatment of various diseases, until, at the present time, it has a well recognized position of importance. As recently as 1914, it was advocated only under extraordinary circumstances and with only a few drugs. Objections offered by Hare and other therapeutists, at that time, were several. One was the difficulty of finding collapsed or small veins. Another was the inability to puncture a vein without injuring the opposite wall. Warnings were also advanced against the possible sequelae: phlebitis, thrombosis, and embolism.

At the present time, if convinced of the efficacy of the medicament, there is no contraindication to its intravenous use. If we do not confine ourselves to the antecubital space at the bend of the elbow in our choice of veins, and render the veins prominent by the use of a tourniquet, we are practically never forced to abandon intravenous medication on account of collapsed or small veins—even in the very young or the obese. With a little experience, wounding of the posterior venous wall is avoided, and with proper aseptic technique, thrombosis and embolism are practically never encountered. The phlebitis which occasionally develops, especially after intensive arsphenamine treatment, is benign and, at most, only necessitates the use of another vein in the future.

The physiologic action of most drugs is dependent upon specific effects (bactericidal or antibody formation), or stimulation of vital centers or organs, and it is by the dissemination of the drug in the blood stream that these effects are produced. Advantages of the intravenous method are that effects are obtained quicker, that the agents, when placed directly in the blood stream, are not altered by the digestive fluids in the stomach or intestinal tract, a more accurate dosage is obtained, and control over the patient is assured.

However, this method is not advocated to the exclusion of well-established and thoroughly efficient methods, but only in those conditions in which careful observation has shown its superiority over older methods of administration.

Syphillis and Other Spirochaetal Diseases.—The discovery in 1905 of the spirochaeta pallida as the cause of syphilis, followed by the discovery of the value of salvarsan as a spirochaeticide, marked the true beginning of intravenous therapy. Used first intramuscularly, salvarsan was soon given intravenously, and such good therapeutic results followed—to say nothing of the substitution of an almost painless method—that this route was soon adopted universally. The treatment of thousands of cases of syphilis with arsphenamine has demonstrated the safety and value of intravenous therapy and has paved the way for the treatment of other conditions by this route. The treatment of syphilis with arsphenamine is too well known to merit description, but it might not be amiss to state that, while this is our most powerful weapon against syphilis, it

*Read before the semi-annual meeting of the Valley Medical Association at Staunton, May 26, 1921.

should always be followed by thorough mercurialization.

Arsphenamine is also useful in spirochaetal diseases of non-syphilistic origin.[1] In Vincent's angina, when there are serious complications, very extensive lesions, or where the ulceration is not controlled by local applications, arsphenamine should be given intravenously, as it is a specific for this disease. This drug also acts as a specific in relapsing fever, yaws, gangosa, and pulmonary spirochaetosis.

A therapeutic effect is noted in rat-bite disease and in certain dental conditions. No benefit has been found in other spirochaetal diseases as Weil's disease and yellow fever.

Anemia.—Transfusion of blood may often be a matter of life and death, either after a sudden loss of blood from hemorrhage, or a gradual loss from such a condition as pernicious anemia. The introduction of the citrate method, by means of which the blood may be collected and transported from donor to recipient, and then be introduced intravenously (by gravity or syringe), has enormously simplified this procedure and made it available for the general practitioner. Also, the discovery of blood types and the consequent preliminary matching of the bloods of donor and recipient, together with the Wassermann test on the donor, have eliminated accidents and sequelae, so that the operation is now perfectly safe and available to all.

Shock.—Of common use and of incontestable worth is the intravenous injection of normal saline, especially if combined with adrenalin, in the treatment of shock. In patients in a critical condition, this treatment is often instituted during an operation with immediate change for the better in color, respiration and pulse quality.

Acidosis.—Acidosis is a disturbance of metabolism in which there is a decreased capacity of the tissues to get rid of carbon dioxide and other acids. The most familiar example of acidosis is that associated with diabetic coma. Acidosis also occurs in many other conditions. It may be the terminal phase of an acute disease or an independent affection. As an example of the latter is the acidosis associated with recurrent vomiting or diarrhea, so often seen in infants. In the acidosis of infants, excellent results have been obtained by Howland and Marriott[2] at Johns Hopkins, as well as by other investigators, by the intravenous injection of sodium bicarbonate. In severe cases, where oral administration is impossible, this is the treatment of choice. The acidosis of diabetes is controlled by diet, alkalies not being recommended by Joslin and others.

Malaria.—The intravenous injection of quinine is indicated in the treatment of fulminant, or pernicious, malaria and the present status of opinion seems to be that it should be reserved for those cases or for patients who cannot take quinine by mouth. Hypodermic and intramuscular injections have been abandoned because it has been shown that a coagulum forms and the greater part of the dose is lost. Also, abscesses and permanent indurations often follow. When given intravenously, quinine should be well diluted with normal saline.[3]

If some new quinine derivative is prepared capable of destroying all the parasites in a few injections, this method will undoubtedly take precedence over the oral administration of quinine.

Glucose in Pneumonia.—During the epidemic of pneumonia following influenza in 1918-19, intravenous injections of glucose were given an extensive trial at the hospitals at various army camps, with very favorable impressions as to its efficacy. While used chiefly as an adjunct measure in the treatment of pneumonia, it is also useful in any febrile condition associated with toxemia or marked dehydration. John[4] concludes from available data and experiments made, that:

1. The administration is without danger.

2. That the patient is made comfortable and sleep is induced.

3. That diaphoresis, with lowering of temperature, is brought about and elimination of skin and kidneys is increased.

4. That a considerable amount of fluid is provided for the circulation, in addition to 100-300 calories of readily available food, thereby slowing the heart rate and providing nutrition.

5. That practically all of the medication can be given in the glucose, including anti-pneumococcic serum in Type I cases.

The dosage of glucose advocated is 250 cc. of a 10% solution, given night and morning or only at night. The commercial product is pre-

ferred by Mosenthal and others, and the solution should be injected very slowly.

Granuloma Inguinalis.—Granuloma Inguinalis, known also as groin ulceration, is endemic among negroes in this country. The Wassermann reaction is negative, and the caus eis as yet unknown, but it is the opinion of Campbell[5] that the intravenous injection of of tartar emetic is a specific. It is used routinely at Bellevue Hospital and other places, and should certainly be given a trial should a case of this disease be discovered. Cases are reported cured or improved by this treatment, which had had intensive arsphenamine and mercury treatment, on the assumption that they were syphilitic, although the Wassermann was negative.

Thrombo-Angiitis Obliterans.—Thromboangiitis obliterans is an inflammatory disease of the blood vessels of unknown origin. In 1915 Mayesima showed that there was a constant high viscosity of the blood in all types of gangrene. In attempts to reduce the viscosity of the blood Meyer[6] was the first to use sodium citrate intravenously. Steel[7] reports very favorable results with the citrate method in the treatment of thrombo-angiitis obliterans, over a period of three years, giving 250 cc. of a 2% solution every second day the first month, and gradually lengthening the intervals. He reports relief of pain and checking of the process in a disease which would otherwise prove fatal.

Nausea of Pregnancy.—An interesting article has recently appeared by Hirst,[8] advocating the intravenous administration of corpus luteum in nausea of pregnancy. He gives 2 cc. doses every other day, or twice daily in pernicious cases, for at least six injections, and reports gratifying results over a two year period. This treatment is at least worthy of trial before it is added to the legion of unsuccessful remedies for the nausea of pregnancy.

Serum Therapy.—The discovery and use of the various antisera has been a great stimulus to intravenous medication and, while results with some of the antisera have been disappointing, yet with others they have been most successful. With the exception of antimeningococcus serum, which is given intraspinally, these antisera are almost universally introduced by the intravenous route.

Bacillary Dysentery.—The serum treatment of bacillary dysentary seems to be well established and, if applied early, produces striking results.[9] The antiserum is, as a rule, injected subcutaneously, but may be injected intravenously in severe cases in doses from 50 to 100 cc. Effects consist in improvement of the nervous symptoms and lessening of shock in a few hours, and disappearance of the tenesmus and colic within twenty-four hours. Chronic cases, as a rule, do not respond to serum treatment.

Diphtheria.—Logically, it would seem advantageous to give diphtheria antitoxin intravenously, as it is necessary for antitoxin to enter the blood stream before it passes to the tissues in contact with the toxin. Given intramuscularly or subcutaneously, the highest antitoxin value of the blood is found twenty-four to forty-eight hours after the injection.[10] When given intravenously, the highest antitoxin value is at the moment of injection—but twenty-four hours later is twice as high as by the intramuscular route. In either event, the antitoxin persists in the blood for several days, and a single dose, if large enough, is sufficient in any case. However, the intravenous use of antitoxin is not generally advocated, but is reserved for very severe cases.

Lobar Pneumonia.—Although specific antisera have been developed for Types I, II and III, pneumococci, only the antiserum for Type I is therapeutically efficient. This has come into general use and should be given as soon as the type is determined. By this treatment, at the Rockefeller Institute,[11] the mortality of this variety was reduced from 25-30% to 7.5%. Ninety to one hundred cc. of the serum should be injected intravenously, and repeated every eight hours until the temperature falls.

Acute Poliomyelitis.—Amos and Chesney,[12] have obtained promising results by the serum treatment of infantile paralysis. The serum is administered both intraspinally and intravenously. Good results have been obtained only by the use of convalescent serum from human cases which have recovered from the disease, and this serum must be given early during the febrile stage.

Streptococcus Infections.—Antistreptococcus serum has not proved of great value and its routine use in the treatment of streptococcic infections is not advocated.[13]

TETANUS.—In the curative treatment of Tetanus our chief reliance is properly placed on the intraspinal administration of tetanus antitoxin, but it is advisable to give an intravenous dose of 5,000 or 10,000 units immediately to neutralize any toxin present in the blood, and this is a generally accepted procedure. Intravenous treatment alone, however, has proved very disappointing.

NON-SPECIFIC PROTEIN THERAPY.—Very recently the intravenous injection of non-specific proteins—albuminose solutions, horse serum, or bacterial proteins—has come into use. While the mechanism of this therapy is imperfectly understood and it is still in the experimental stage, yet remarkable improvement has followed in some of the arthritides,[14] with some apparent cures, and favorable results have been obtained in some cases of gonorrheal arthritis and epididymitis.[15]

CONCLUSIONS.

1. Intravenous therapy is well established and is an invaluable therapeutic measure.

2. The procedure is practically without danger and does not require especial training or skill for its use.

3. It is the recognized method of choice for the administration of arsphenamine, transfusion of blood, infusion of saline and adrenalin, and for most of the serums in serum therapy. It is a valuable method for the introduction of alkalies in severe acidosis, and for quinine in pernicious malaria.

4. If further observations bear out present indications of therapeutic success, it will become the recognized method for the administration of glucose in pneumonia, of tartar emetic in granuloma inguinalis, of sodium citrate in thrombo-angiitis obliterans, and possibly of corpus luteum in the nausea of pregnancy.

REFERENCES.

1. Reasoner, Matthew A., and Nichols, Henry J., J. A. M. A., 75:645, Sept. 4, 1920.
2. Howland, John, & Marriott W. McKim, Penn. Med. Jour., April, 1918. Vol. 21, p. 429.
3. Craig, Chas. F., Mod. Med., Osler & McCrae, Vol. 2, p. 105
4. John, Henry J., Am. J. Med. Sc. Vol. CLX., No. 4, Oct., 1920.
5. Campbell Meridith F., J. A. M. A., 76:648, Mar. 5, 1921.
6. Meyer, Willy, Ann. Surg. 63:28 (Mar.), 1916.
7. Steel, William A., J. A. M. A., 76:429, Feb. 12, 1921.
8. Hirst, John C., J. A. M. A., 76:773, Mar. 19, 1921.
9. Weaver, George H., J. A. M. A.,76:34, Jan. 1, 1921.
10. Flexner, Simon, J. A. M. A., 76.108, Jan. 8. 1921.
11. Park William H., J. A. M. A., 76:109, Jan. 8, 1921.
12. Amos, H. L. & Chesney A. M., J. Exp. Med., 25:581, Apr., 1917.
13. Mon. Rockefeller Inst., No. 7, Oct., 1917.
14. Cowie, David M., J. A. M. A., 76:310, Jan. 29, 1921.
15. Culver, Harry, J. A. M. A., 76:311, Jan 29, 1921.

MEASURING INTELLIGENCE.*

By E. P. TOMPKINS, M. D., Roanoke, Va.

It has occurred to me that this Academy, having heard many able and interesting papers on strictly medical, that is to say, *therapeutic* subjects, during the session now drawing to a close, might be willing to consider, for a few minutes, another matter which, while strictly scientific, is more in the diagnostic than in the therapeutic line. And so I invite your attention to the efforts that are being made to perfect a system of getting at the intelligence of any given individual, or group of individuals. It is a subject about which probably as yet only a comparatively few doctors of medicine have learned much, but Mr. Edison's recent use of this method of testing out his would-be employees, and the resultant newspaper publicity, have brought the subject into the public eye.

In the first place, what is intelligence? It is not such an easy thing to define. Many definitions have been offered. From the psychological standpoint it is the power of creative elaboration of new products from material given by memory and the senses. From the practical point of view, it involves the ability to surmount difficulties, to avoid errors, and to adjust one's self to environment. Stern defines intelligence as "the capacity of an individual to adjust his thinking to new requirements; it is general adaptability to new problems and conditions of life." Many other definitions might be quoted.

While we may not be able to *exactly* define intelligence, yet everyone knows what the word stands for, at least in a general way. Now, to measure such an elusive thing is not an easy task. Psychologists had experimented with intelligence tests for twenty years at

*Read before the Roanoke Academy of Medicine, June 6, 1921.

least, before a Frenchman, Alfred Binet, brought out a method, known as the Binet-Simon scale, Doctor Simon a medical man being associated with him in his research work. Binet died in 1911, before he had completed his method. His work has been taken up by others, and brought reasonably near to completion, that is to say, we have now in what is known as the Stanford Revision of the Binet-Simon Scale, a reasonably accurate test of intelligence, having been tried out on 2,300 children and grown-ups. This is largely the work of Professor Lewis M. Terman, Professor of Education in Stanford University, California, assisted by a corps of fellow-workers. Much of the contents of this paper is from his writings, as well as from those of H. H. Goddard, director of the Vineland Laboratories where, as you know, is a large institution for studying feeble-minded children; also from the writings of J. E. Wallace Wallin, director of the Psycho-Educational Clinic of St. Louis. It may be said at the outset that criticisms of the Binet method have been frequently voiced, but chiefly by persons who have had little or no experience with the method.

Psychology is the science of mind, and mind determines human conduct. Psychology should enable us to control our conduct both through an understanding of ourselves, and an understanding of the motives and actions of others. For a generation we had thought the Germans were the greatest living psychologists. Yet no small cause of their downfall was due to their inability to comprehend the minds of their adversaries.

Human psychology may be divided into child psychology and adult psychology, and again into normal and abnormal. Obviously, these overlap, so that we have normal and abnormal child psychology and normal and abnormal adult psychology. The biologist does not seize upon the first plant or animal that comes to hand, and attempt to solve his problem. Instead he seeks a plant or animal of the simplest structure that can furnish the data needed. He proceeds from the simplest to the complex. The study of the child mind is a great step forward because the child mind is simpler than the adult. But child study has two limitations;—first, because children are both normal and abnormal. This was not recognized at first. At least two per cent. of any large number of children are to some degree feeble-minded. Second, because the normal child develops so rapidly. In the feeble-minded we have a group who are not developing, and so are more easily studied. A child arrested in his mental development at eight years has eight year mentality the rest of his life. We can, therefore, devote as much time as we wish to thus studying the eight year level. The advantages of this are many. If a passing train is going sixty miles an hour we can see few of its details, if it is going only five miles, we can see more, while if it is stopped and sidetracked, we do not need to limit time and method. The feeble-minded are stopped and there are almost no limitations to opportunity for study.

There are four fundamental questions relating to subnormal individuals which invite scientific investigation:

First, The development of an adequate art of differential diagnosis of the different degrees and types.

Second, The matter of providing appropriate educational treatment.

Third, The question of after-care, after-guidance, and control.

Fourth, The development, if possible, of preventive measures, eugenic or otherwise, to reduce or to eliminate the army of subnormal incompetents.

The basis of all is diagnosis. An accurate estimate of the level of intelligence in school children, and of child and adult offenders in the courts, is of practical importance, not to the individual only, but to the state, the nation and the family. The diagnosis is easy, in the well-marked class, but no one except an expert, and not always he, can determine borderline and backward cases, and the number of these is legion, both as to children and adults.

This diagnosis cannot be made by one having only a superficial knowledge of the subject, those known simply as Binet testers: it has been said these bear the same relation to the thoroughly trained psychologist that trained nurses bear to doctors of medicine.

There are two methods of study by which it is hoped to make eugenic diagnoses: heredi-

tary study of ancestral strains, and psychological testing the level of intelligence and of mental deviation. Present day hereditary studies are usually conducted with either a Galtonian, or a Mendelian bias.

Galton's law is briefly this: One-half of the individual's heritage comes from the two parents (that is one-fourth from each parent), the other half being made up thus, one-sixteenth from each of the four grandparents, one-eighth from the eight great grandparents, that is one-sixty-fourth from each, and so on back through the ancestral lines. This is believed to express with fair accuracy the contribution made by the several ancestral lines.

Mendel's so-called law is not quite so easily stated. He found out certain facts in the propagation of peas, peas being normally self-fertilizing, that is not cross-fertilized by insects, thus when a strain of tall peas (about six feet in height) was artificially crossed with a strain of dwarf peas (about one and a half feet tall), all the hybrid peas of the first generation (called F-1) were invariably tall. Tallness was found to be *dominant* and dwarfness *recessive*, which is used to mean that when a character from one parent appears in the offspring to the exclusion of the contrasted character from the other parent, it is dominant, while a character from one parent, which remains undeveloped in his progeny when associated with the corresponding dominant from the other parent, is recessive. When these tall hybrid peas of the first generation were mated, the offspring (F-2) were either tall or short, but never intermediate. There was always approximately three times as many tall as of short peas, the typical Mendelian ratio when one pair of characters is involved. Finally, when the seeds from the second hybrid generation were separately harvested and sown, it was found that dwarf recessives bred true, producing nothing but dwarfs, but the tall peas like the original tall hybrids, produced tall and dwarf peas in the ratio of 3 to 1. The same principle obtained in all other experiments, where the inheritance of an alternate pair of characters was concerned. Successive crossings yielded only three kinds of individuals: dominants which bred true, dominants which bred both dominants and recessives, and recessives which always bred true.

The Mendelian theory has been applied to the explanation of the inheritance of a large number of characteristics in plants and animals, and to a large number of mental and physical traits in man, including such complex conditions as feeble-mindedness, epilepsy, insanity, etc. Some Mendelians have asserted that, given certain conditions of ancestral strains, it is possible to forecast with almost mathematical precision the relative incidence in future generations of normality and abnormality, feeblemindedness, epilepsy and insanity. We are told that feeblemindedness is a unit trait, that it behaves like a recessive following the Mendelian ratio, that when two feebleminded are mated all the children will be feebleminded, that when a feebleminded and a perfectly normal person are mated, the children will be normal but carriers of feeblemindedness, that when two carriers marry twenty-five per cent. of the offspring will be defective, while fifty per cent. will continue to be carriers. These views it may be said, however, have been vigorously combated.

Now as to the method originated by Binet. "The Binet scale is made up of an extended series of tests in the nature of 'stunts', or problems, success in which demands the exercise of intelligence. As left by Binet the scale consists of 54 tests, so graded in difficulty that the easiest lie well within the range of normal three year old children, while the hardest tax the intelligence of the average adult. The problems are designed to test native intelligence, not school knowledge or home training. They try to answer the question, 'How intelligent is this child or this adult?' How much he has learned is of significance only in so far as it throws light on his ability to learn more."

The tests were arranged in order of difficulty, as found by trying them upon some two hundred normal children of different ages from three to fifteen years. It was found, for illustration, that a certain test was passed by only a very small proportion of the younger children, say the five year olds, and that the number passing this test increased rapidly in the succeeding years until by the age of 7 or 8 years, let us say, practically all the children were successful. If the test was passed by about two-thirds to three-fourths of the normal children aged 7 years, it was considered

by Binet a test of 7 year old intelligence, and so on. By trying out many different tests in this way it was possible to secure five tests to represent each age from 3 to 10 years, (except age 4, for which there are only four tests), five for age 12, five for age 15, and five for adults, making 54 in all.

In using the tests, let us suppose a child being tested is 9 years of age. If he goes as far in the tests as normal 9 year old children go, we say his "mental age" is nine years. If he goes only as far as normal 7 year olds go, we say his "mental age" is seven years, etc. A child mentally defective may have a "mental age" of only 4 years, even though his actual age may be 8 or 10 years, while a young genius of nine may have a mental age of 12 or 13. The grading is more definite by this method than by any hitherto proposed. Descriptive terms like, "bright", "moderately bright", "dull", "very dull", etc., have no universally accepted meaning. One person may say of a child or adult, "He is very bright", while another one may grade him as only "moderately bright". But every one knows what is meant by 8 year mentality, 4 year mentality, etc.

Why should a device so simple have waited so long for a discoverer? We do not know. It is of a class with many other unaccountable mysteries in the development of scientific matters. Apparently the idea of an age-grade method, as this is called, did not come to Binet himself until he had experimented with intelligence tests some fifteen years. The discovery ranks, perhaps, from the practical point of view, as the most important in all the history of psychology.

"What is the use of this?", is a question which naturally would be asked. In reply it may be said that many uses have been found, and many others will yet develop. Mr. Edison says of the men who apply to him for jobs requiring intelligence, "I cannot tell by looking at a man what he knows, and I want some method by which I can form an estimate of his value in my workshop," and he says further "Billions of dollars are wasted in putting men into places they cannot fill." So the vocational field is a fruitful one for this system. The time is probably not far distant when intelligence tests will become a recognized and widely used instrument, an "instrument of precision", if you please, for determining vocational fitness. Any business employing as many as five hundred or a thousand workers, as for instance a department store, could save in this way several times the salary of a well-trained psychologist.

Again, the most important question of heredity is that regarding the inheritance of intelligence. This problem cannot be attacked without some accurate means of identifying the thing which is the object of study. Without the use of scales to measure intelligence we can give no better answer as to the essential difference between a genius and a fool than is found in legend and fiction.

Thus far intelligence tests have found their chief application in the indentification and grading of the feebleminded. Intelligence tests are rapidly extending our conception of feeblemindedness to include milder degrees of defect than have generally been associated with this term. One of the important facts brought to light by the use of these tests is the frequent association of delinquency and mental deficiency. Although long recognized that the proportion of feeblemindedness among offenders is rather large, the real amount has until recently been underestimated by even the most competent students of criminology. Criminologists have in the past been accustomed to give more attention to the physical than to the mental correlates of crime. Thus, Lombroso and, I believe, Max Naudeau subjected thousands of criminals to observation and measurement with regard to such physical traits as size and shape of the skull, anomalies of the ear, nose, eye, teeth, hands, feet, fingers, etc. Although such studies performed an important service in creating a scientific interest in criminology, the theories of Lombroso have been wholly discredited by the results of intelligence tests. They demonstrate beyond any possibility of doubt, that the most important trait of at least twenty-five per cent. of our criminals is mental weakness.

Heredity studies of "degenerate" families have confirmed in a strikng way the testimony secured by intelligence tests. Among the best known of such families are the "Kallikaks", the "Jukes", the "Hill Folk", the "Nams", the "Zeros", and the "Ishmalites". As to the Kallikaks, Martin was a youthful

soldier in the Revolutionary War. He met a feebleminded girl at a tavern frequented by the militia, and by her he became the father of a feebleminded son. In 1912 there were 480 known descendants of this temporary union. It is known that 36 of these were illegitimates, that 33 were sexually immoral, that 24 were confirmed alcoholics, and that 8 kept houses of ill-fame. The explanation of so much immorality will be obvious when it is stated that of the 480 descendants, 143 were known to be feebleminded, and many of the others of questionable mentality. A few years after returning from the war, this same Martin Kallikak married a respectable girl of good family. From this union 496 individuals have been traced in direct descent, and, in this branch of the family, there were no illegitimate children, no immoral women, and only one man who was sexually loose. There were no criminals, no keepers of houses of ill-fame, and only two confirmed alcoholics. This branch of the family did not contain a single feebleminded individual, but was made up of doctors, lawyers, judges, educators, traders, and landholders.

Most physicians are familar with the notorious Jukes family, 130 of whom have been convicted of crime, and who it is said have in the last seventy-five years cost the state of New York the sum of one million, three hundred thousand dollars, besides the diseases and other evil influences they have helped to spread. Max Jukes was born in 1720, and up to within a few years, twelve hundred of his descendants have been identified. Of these 300 were in the poor house, 300 died in childhood, 440 were viciously diseased, 400 physical wrecks, 128 women out of 229 of marriageable age were prostitutes, and 60 were habitual thieves, averaging twelve years each in jail.

Considering the tremendous cost of vice and crime, estimated at five hundred million dollars per year in the United States alone, it is evident that psychological testing has found here one of its richest fields of endeavor. Before offenders can be subjected to rational treatment, a mental diagnosis is necessary, and, while intelligence tests do not constitute a complete psychological diagnosis, they are nevertheless its most indispensable part.

So far as Roanoke is concerned, the only use that has yet been made of this intelligence testing, if I am correct, is in the public schools. Only a few of the children have so far been tested by this method. It requires about forty minutes to each child, when individuals are tested, but there is a method of group testing which has been used to some extent. During the winter just passed, Dr. Ferguson, of the University of Virginia, gave a series of lectures to certain of the teachers, I understand, and presumably these teachers will be qualified to give intelligence tests to the pupils later. When the Stanford Revision was being worked out, however, six months' instruction was first given to those who were to take part in the tedious detail.

In the Lee Junior High School here, I am told that forty-two per cent. of the children failed to pass on one or more subjects. This means that teachers will have to be employed next year to teach over again what has been already taught, but was not learned. It is probably not far from correct to say that fifteen per cent. of the money spent in the Roanoke schools is spent in this way, that is to say the salaries paid to 45 of the 276 teachers is money spent to *re-teach subjects already gone over.* Of course not all of this is due to mental deficiency of the pupils; much of their failure is due to general "cussedness" in not studying; but, if any of it is due to mental deficiency, the sooner this fact is known, as to any given pupil, and the remedy applied, the greater the saving of taxpayers' funds.

309 *Strickland Building.*

ETIOLOGY, PATHOLOGY AND DIAGNOSIS OF SURGICAL DISEASES UNDER THE SYMPOSIUM OF "DISEASES OF THE KIDNEYS, URETERS AND BLADDER".*

By LAWRENCE T. PRICE, M. D., Richmond, Va.

Before entering upon the discussion of the etiology, pathology and diagnosis of surgical conditions of the urinary tract, it is best to establish clearly what is included under the term "surgical conditions."

In certain instances of pathological conditions of the urinary passages, it is perfectly obvious that some surgical procedure repre-

*Read before the South Piedmont Medical Society, Lynchburg, Va., April 19, 1921.

sents the only suitable method of treatment; in other cases, however, it is debatable whether the condition should be classified as surgical or medical. Thus, in renal calculus or neoplasm, there can be no question as to the valuelessness of medical temporizing; in pyelitis, on the other hand, purely medical measures, such as rest in bed, the free administration of fluid, and, possibly, the use of urinary antiseptics may prove efficacious and obviate the necessity of recourse to surgical procedures, such as lavage of the renal pelvis or dilation of the ureters. It is apparent, therefore, that we cannot arbitrarily place certain cases under the heading "surgical" and others under "medical"; some overlapping occurs. In the present discussion, however, I shall consider as "surgical" conditions all those where surgical methods of treatment have been proved of value.

It is obvious that a comprehensive discussion of the etiology and the pathological anatomy of the surgical conditions of the urinary passages would consume much more time than has been assigned to me. Of necessity, therefore, it must suffice to mention only briefly certain salient features bearing on these important points.

The surgical conditions of the bladder are usually secondary to pathological processes elsewhere in the urinary tract. Vesical neoplasms and traumata, on the other hand, may be located primarily in the bladder. In the ureters, the condition generally is transmitted from the kidney above or the bladder below; but it may arise from adjacent abdominal viscera or as the result of trauma. In the kidneys, the condition which demands surgical intervention is generally primary; tuberculosis is always secondary to systemic infection, and renal calculi are due to some perversion of the mineral metabolism, though infection in the renal pelvis is probably always an important determining cause. Pyelitis, considered as a surgical condition, is generally due to infection somewhere else in the body, the organisms being carried in the blood to the pelvis of the kidney. It has been claimed that pyelitis may arise from infection lower in the tract, constituting an ascending infection, but this is improbable.

Even with the utmost refinements of diagnostic skill, it is not always possible to determine definitely the nature of the disease process. In most cases, however, the adoption of a routine method of examination of the urinary tract will enable not only the skilled urologist but even the intelligent and painstaking general practitioner to obtain much useful information. In the instances where the simpler diagnostic methods fail to establish the diagnosis satisfactorily, it is necessary to have recourse to the more elaborate methods which are utilized by the specialist. It seems to me that it would be of value to outline briefly the plan of procedure which I have found useful; discussing those methods which do not demand especial skill or apparatus and then taking up the more elaborate procedures.

In the first place, a careful history is of the utmost importance. Inquiry should be made as to the frequency of voiding, day and night; dysuria, pyuria, and hematuria. The history of the occurrence of hematuria should lead to further questioning to ascertain whether the appearance of the blood depends upon exercise; whether it appears at the beginning or the end of urination or whether the blood is evenly mixed with the urine. The occurrence of pyuria should always be specifically inquired into. Naturally, the average patient bases his statements regarding the occurrence of pyuria on the appearance of the urine; a cloudy specimen indicating pus. It is well to recall that this is by no means conclusive; phosphates in even a freshly voided specimen of urine may be so abundant as to impart a true milky opacity. The presence of pain is also of importance. We should ascertain its location, direction of radiation, degree, and character. It should be borne in mind that the pain is often referred, that due to vesical calculus, for instance, being localized in the penis. Another important point regarding pain in the urinary passages, first pointed out by Chute and recently emphasized by Vanderhoof, is that the cause may lie outside the urinary tract, disease of the spinal vertebrae sometimes causing pain very similar to that of renal calculus. The patient should be questioned as to the occurrence of acute febrile attacks; "chills and fever," loss of weight, night sweats, and, of the utmost importance, venereal infection in the past should be carefully considered. It is a well recognized fact, however, that this part of the history is often of very little value because of lack of frankness

on the part of the patient. In the female patients we should ascertain if there has been recent pregnancy and, if so, whether untoward symptoms occurred during it.

In dealing with a male patient, the first step in the examination is to make use of the three glass test. In order to do this, have the patient void into three conical sedimentation glasses; the first portion of the urine in the first glass, the intermediate portion into the second glass, and the last of the urine in the third glass. The appearance of pus or blood in the first glass, the urine in the other glasses being clear, indicates that the pathological process is in the urethra; if the first and second glasses contain clear urine, while the third shows pus or blood, the conclusion to be drawn is that the bladder is involved; if the urine in the first and third glasses contains pus and blood, while that in the second glass is clear, the indication is that the vesicles and prostate are involved. If, in this last case, the bladder and urethra be irrigated and the bladder be left filled with the irrigating fluid, upon voiding this fluid in the three glasses, it will be found that the abnormal elements appear only in the third glass, this confirming the diagnosis of disease of the vesicles and the prostate. If all three glasses show blood or pus evenly alike, the pathology is of kidney origin.

Following the three glass test, a careful palpation of the scrotal contents is made. Attention should be directed to the condition of the testicles, together with the globus major and minor; the presence or absence of varicosities in the veins; and the condition of the vas.

Next, by means of a rectal examination, the attempt is made to gain additional information in regard to the prostate and vesicles. Especial attention should be paid to the size of the gland, its density, and the character of its surface, whether regular or irregular. The palpating finger at the same time enables us to ascertain the condition of the seminal vessels; whether they are dilated, sclerosed or normal.

By means of massage of the prostate, the secretion is obtained and may be examined for the presence of bacteria, infection here being of great importance in determining the occurrence of arthritis, neuritis, or cardio-renal disease. If I may be pardoned the digression, I should like to remark upon the apparent disregard shown by many physicians as to the possibility of systemic poisoning from focal infection in the urinary tract, especially in the prostate and vesicles. In my opinion, this is fully as important a source as the teeth or tonsils.

Having completed these preliminary steps, the urologist, if uncertain as to the diagnosis, then invokes the aid of the roentgenologist. A careful roentgenological examination of the urinary tract is of the utmost value, and should always be made when there is a history of pain suggesting the presence of calculus. By means of the X-ray, the location, size, and number of the stones may be determined.

By means of the endoscope, the interior of the urethra may be examined. Infrequently, pathological processes are located here; as illustrative, I may mention a case seen recently, where there was persistent and rather profuse hematuria. On employing the three glass test, all of the blood was present in the first glass; endoscopic examination revealed the presence of a polyp in the membranous urethra.

The cystoscope enables us to inspect the interior of the bladder and to determine the existence of pathological conditions here. Thus, vesical calculus or neoplasm, tuberculosis, diverticulae, trabeculation, cystitis, or trigonitis is revealed if present. Furthermore, the appearance of the urethral orifices may furnish information regarding a diseased condition elsewhere. Thus, tuberculosis of the kidney leads to the development of a characteristic ulceration around the ureteral orifice. Stone of the kidney or ureter, or, indeed, any condition which gives rise to pus formation, produces inflammation of the orifice of the ureter and the occurrence of the "fish mouth meatus," of diagnostic importance. The attempt to introduce a ureteral catheter into the ureter may reveal the presence of stricture; or the passage of the catheter may be prevented by ureteral kinks, angulations or calculi. Ureteral catheterization also enables us to determine the organ involved in unilateral renal diseases, the blood, pus, or bacteria, appearing in the urine obtained from the diseased kidney. Tubercle bacilli may be demonstrated in the urine, but this often fails and it is then necessary to resort to guinea-pig inoculation.

While the catheters are within the ureters, phthalein may be injected intravenously and

the time of its appearance in the separate urines noted, this giving us information as to the functional capacity of the two kidneys. At this time, the pelvis of the kidney may be injected with some opaque medium, as sodium bromide solution, and the condition of the renal pelvis ascertained by X-ray examination.

Abdominal palpation may disclose the presence of certain gross lesions of the urinary organs, such as tumor of the kidney, pyonephrosis, or hydronephrosis, and occasionally, pyelitis. Information as to the condition of the ureters and of the bladder may rarely be obtained by abdominal palpation. Indeed, this procedure is of very little value in telling us any more than we have learned by the other methods which have previously been mentioned.

While probably of more importance from the standpoint of medical condition, the examination of the blood is often useful to the surgeon also. Thus, the total non-protein nitrogen and the urea may indicate the functional capacity of the kidneys; and, as has been recently emphasized by Bigelow, creatinin determination has great value as regards prognosis, a retention of more than 2.5 mgm. per 100 c.c. of blood, indicating that recovery will not occur.

To demonstrate the practical application of some of the above cited points of information, I am reporting one case which reveals the facts desired and establishes a diagnosis of a condition other than that which appeared to be present by the superficial history of the case and the symptoms elicited, and which would naturally have been taken to be that of a case of cystitis pure and simple:

Case No. 3279. Mr. A. B. R., age 24, referred for diagnosis and treatment, diagnosis by referring doctor being cystitis. Patient had usual diseases of childhood, otherwise has been healthy throughout life, of average size and physique. Patient stated that while in the army in October, 1917, had influenza. Five weeks ago was taken ill with an acute pain in the region of the bladder, with frequency of urination. Examination of the patient was as follows:

Penis, scrotal contents, prostate and seminal vesicles normal. Bladder capacity 4 ozs. Urine foul and with much difficulty the bladder was cleansed. Bladder negative for stone, ulcer and tumor. The mucous membrane of the entire bladder is densely congested. Both ureter openings standing open, resembling the appearance of small diverticulae. Catheters readily introduced to the pelvis of both kidneys and specimens obtained.

Laboratory: 1 c.c. phthalein administered intravenously. Appearance left side 7 minutes; 30 minutes secretion 21%. Appearance right side 14 minutes; 30 minutes secretion scant trace.

Twenty c.c. 20% solution sodium bromide injected into the pelvis of the right kidney and submitted for X-ray.

X-ray report shows both kidneys and ureters negative for stone. Left kidney normal in size and position. Right kidney apparently small in size, but the pelvis of the kidney is markedly dilated and shows evidences of destruction of the calices. The right ureter is considerably dilated.

Analysis of urine from right side shows practically nothing but pus cells and the gross appearance is that of pus; negative for tubercle bacilli; great quantity of staphylococci present. Culture gives abundant growth of staphylococcus.

Left ureter specimen shows an occasional pus cell. Culture gives a moderate growth of staphylococcus.

Wassermann negative.

Blood urea 65 milligrams per 100 c.c.

Conclusions: Taking into consideration the above findings, it appears that the right kidney is materially diseased, the nature of which is a pyonephrosis, and that the left kidney is doing the work of both kidneys, though it has some infection. The cystitis of the bladder is accompanying the condition of the right kidney and is secondary thereto.

Recommendations: That a right nephrectomy be done and that autogenous vaccine and a urinary antiseptic be administered by way of treatment for the left kidney.

Urological Diagnosis. Pyonephrosis of the right kidney.

This kidney was removed and the above findings corroborated. The kidney was atrophied to about one-fifth size, with very little functional tissue left. The pelvis of the ureter contained about two ounces of pus and urine and a very definite stricture existed at the ureteropelvic junction.

In conclusion, the etiology depends upon the following facts:

First. (a) Bladder conditions are universally secondary to kidney conditions except in neoplasms.

(b) Ureter conditions are secondary to conditions either in the bladder or kidneys.

(c) Diseases of the kidney are primary with the exception of tuberculosis and diathesis for stone formation.

Second. The pathology of bladder and ureter conditions is that of the pathology of like conditions elsewhere in the body, having like conditions and degree.

Third. The diagnosis is revealed by approaching the case by the simple methods first, a clear understanding of the history symptoms, and the observation of the urine voided in three glasses, which fixes the location of the disease. The conclusive diagnosis is established by the use of the cystoscope and accessory laboratory and X-ray examinations.

505 *Professional Building.*

REPORT OF A CASE OF CHRONIC NEPHROSIS AS CLASSIFIED BY EPSTEIN.*

By CHAS. E. CONRAD, M. D., Harrisonburg, Va.

To begin with, I will give a summary of an article by Dr. Albert A. Epstein of New York, as reported in The Medical Clinics of North America, July, 1920.

"Through the lack of a more suitable nomenclature the term 'chronic parenchymatous nephritis' is ordinarily applied to a variety of renal affections. Under this heading we find grouped cases of chronic diffuse nephritis, of amyloid kidney, and cases of so-called chronic nephrosis. Although the types of cases are pathologically different, the similarity of the outstanding symptoms, namely albuminuria, oliguria, and edema, makes them frequently almost indistinguishable. Recent investigations on the chemistry of the blood and on the urine have added much helpful information on the disease in question, but ultimate recognition of the exact nature of the renal disease in a given case often depends upon historic facts, etiology, and a number of associated clinical phenomena.

"Chronic nephrosis is a term not really suited to the condition which it is intended to define, but for want of a better name will be used here to signify the chronic degenerative tubular nephritis. Chronic nephrosis occurs usually in relatively young persons. It is of obscure or unknown origin, and bears no relation to known infectious diseases. In women, pregnancy may stand in etiologic relationship to the condition. It is characterized by a pronounced albuminuria, with or without casts. The urine is usually free from blood elements. The blood-pressure is not elevated. At first the condition may be devoid of other gross manifestations; but, as it progresses, oliguria and edema invariably develop. Cardio-vascular changes are not present unless brought about by some secondary extrarenal cause. Pallor is usually very pronounced. Subjectively the patient may complain of headaches, dyspnea, and vomiting.

"From the standpoint of etiology, chronic nephrosis is usually of obscure origin, and occasionally pregnancy stands in causal relation to it. The following case is one in which the renal condition developed shortly after parturition, and, although only of moderate severity, exhibited many of the conditions just mentioned."

A case was quoted in which patient on a Karell and salt free diet for five weeks showed no results.

"The result was not surprising, and bore out the view that the salt retention theory of the causation of edema in this type of renal disease is undoubtedly fallacious. This case gives striking proof that successful cure of the edema and ultimate recovery is more likely to follow the procedure based upon the view that the edema in chronic nephrosis is due to extrarenal causes, chief of which is the alteration in the blood chemistry referred to above. Briefly stated, the cause of edema in this type of nephritis (Epstein) is the decreased osmotic pressure of the blood resulting from the diminution of the protein content of the blood-serum, a condition directly due to the steady loss of large quantities of albumin in the urine. The altered condition of the blood-serum (and the consequent reduced osmotic pressure) favors the absorption and retention of fluid by the tissues. Hence the great edema and oliguria.

*Read before Valley Medical Association, in Staunton, May 26, 1921

"The increased lipoid content in the blood which occurs in chronic nephrosis, indicates a state of impaired nutrition, and constitutes an additional dusturbing factor in the physico-chemical state of the blood. The indications for the treatment of such cases rest in the facts mentioned, and therefore are: first to increase the protein content of the blood, and thus restore its osmotic power; second, to remove the excessive lipoids. To effect this a diet is necessary which is rich in proteins and poor in fats. Starchy foods are limited in order to promote the maximum assimilation of proteins and to lessen the production and retention of water. Fat is limited to lessen the amount of lipoids."

Mrs. C., age 40. Complaint, swelling of feet and legs.

Family History. Nothing important except aunt had swelling similar to patient.

Past History. Had diphtheria and scarlet fever as child, typhoid fever twenty years ago, tonsillitis as child, but not for some years.

Voids freely; does not have to get up at night. Married seven years, no children and no miscarriages, periods regular and without pain. Patient first noticed in July, 1919, swelling of feet and ankles, extending up to the knees. After a night's rest swelling would disappear.

I saw her first in September, 1919, at which time there was decided oedema, extending up to knees. I put her to bed for five weeks on milk diet, when oedema subsided, only to return when allowed up. I put her to bed again about the first of November, but this time the oedema did not subside with rest in bed, and in addition she began to show oedema of hands and face; by middle of November she showed general oedema of body.

Only slight dyspnea on exertion, and that only recently, no dizziness, no headache, no nausea. In fact, no physical complaints except oedema. Heart sounds normal, pulse 78. Blood pressure, systolic, 130; diastolic 80. Urine showed sp. gr. 1018, marked amount albumen and many hyalin and granular casts.

I made a diagnosis of chronic parenchymatous nephritis. As patient was not responding to treatment, I referred her to a physician in Richmond, Va., November 19, 1920.

His diagnosis was diseased tonsils, alveolar abscesses, chronic glomerulonephritis and simple goitre. While in Richmond, she had her tonsils removed and several teeth extracted. She returned home December 20, 1920, and showed slight increase in oedema over when she left in November. He advised rest in bed for about half of each day, restricted salt, acids and proteids. I followed his advice but patient continued to get worse, so, on February 1, 1920, I referred her to a physician in Baltimore, Md.

In a letter from this doctor to me, March 2, 1920, on her return home, he states: "Physically she shows the characteristic appearance of a chronic nephritis with evidence of slight anemia," and gave a very grave prognosis.

Her oedema became more marked so that you could press with finger any place over her body and leave deep imprint.

She began to show marked ascites by the first of July, which became so marked and gave her such great discomfort in breathing (she had to be propped up in bed to breathe with any comfort) that I did an abdominal paracentesis July 28, 1920, withdrawing two and a half gallons of fluid, and puncture drained freely for three days after operation.

August first, I had nurse give her a sweat for one hour each day. This was done by wrapping her in blankets and applying hot water bottles around her.

August 11, 1920, ascites had returned to same degree as before tapping. Then I decided to try her on a high proteid diet, based on the fact that she had a normal blood pressure, systolic 130, diastolic 80, normal heart sounds, except weak, and practically little or no cardiac enlargement.

Her output of urine August 12 was three ounces in twenty-four hours and, while not measured accurately before, had been very scant for the preceding week.

I gave her the following diet August 12, 1920.

	Diet	GRAMS F.	P.	C.H.
Water	240 c.c.			
Milk (skimmed)	360 c.c.	3.5	12.6	14.4
Coffee	180 c.c.			
Eggs (white)	8		32	
Crackers	2			
Veal Chop	1	3	7	

Chicken	2 oz.	10	16	
5% vegetables	8⅓ oz.			12.5
10% vegetables	3¼ oz.			10
Orange	1			13
Broth	220 c.c.		5.2	
Total grams		16.5	67.2	47.5
Caloric value		117-2	44.8	-190
Total calories	551.8			

Urine output in ounces, with intake of 32 ounces in 24 hours.

August 12	3	August 21	60
14	16	23	48
15	32	25	44
17	32	27	64
18	40	29	64
19	56		

August 16. Less oedema in legs and abdomen.

August 18. Decided reduction in oedema in legs; right leg nearly normal. Abdomen same as 16th.

Addition to diet: One veal chop and one orange.

Increase F. 3, P. 7, C.H. 13.

Caloric increase, 142.7 calories.

August 23. Added white one egg, one cracker, 1 2-3 ounces 5% vegetables.

Increase proteid three per cent. C.H. two and one-half per cent.

Total calories to date 700.8.

Only slight oedema remained and that over tibia in both legs. None in tissues over abdomen, face, back, arms or hands. Decided reduction in ascites. Heart sounds normal, apex felt 5th interspace inside mammary line.

August 26. Urine examination shows.

Sp. gr. 1018, albumen abundant; reaction acid; color, straw. Microscopical examintion shows marked reduction in casts. Added to diet, 1 ounce oatmeal, creackers to make one ounce and white one egg.

F. 21, P. 90.2, C.H. 102½.

Total calories to date, 959.8.

September 6. Slight oedema over tibia, both legs; otherwise, no oedema. Urine 64 ounces a day, up in chair one hour twice a day. Added to diet 40 c.c skimmed milk, 80 c.c. broth.

September 9. Up in chair two hours twice a day; all oedema gone.

September 13. Slight oedema in ankles after being up second time the day before. None on this date, so allowed up four hours twice a day.

September 24. Patient's weight 105 pounds; allowed out in automobile.

		GRAMS		
Sept. 28.	Diet	F.	P.	C.H.
Water	240 c.c			
Milk (skimmed)	800 c.c.	8½	2.9	35.8
Coffee	180 c.c.			
Eggs (white)	10		36	
Crackers	1 oz.	3	3	20
Veal chops	2	6	14	
Chicken	2 oz.	10	16	
5% vegetables	15 oz.		7.5	15
10% vegetables	3½ oz.		1¾	7
Oranges	2			23
Oatmeal	2 oz.	4	10	40
Bread	3 oz.		9	54
Apple	2 oz.		.5	6
Potato	2 oz.		2	12
Total		31½	131.5	212.8

Total caloric value, 1691.2 calories.

October 5. No oedema. Can walk around to do shopping and look after home. Weight 107½.

November 26. Albumen has not diminished but only occasional cast with centrifugalized specimen.

April 5, 1921. Albumen diminished ½. Heart normal. Blood pressure, systolic 125, diastolic 85, haemaglobin 70 per cent. At present, nine months after starting high protein diet, she feels well, is able to lead a normal life. She has no oedema and aside from the albumen in her urine shows nothing abnormal on physical examination.

NASAL (SPHENOPALATINE MECKEL'S) GANGLION NEUROSIS AND HYPERPLASTIC SPHENOIDITIS.*

By HERBERT R. ETHERIDGE, M. D., Norfolk, Va.

As far as I can find out, the first reference to this syndrome was first described by Dr. Greenfield Sluder in 1908. To understand better this condition I shall try to explain the anatomy.

Anatomy.

The nasal ganglion, also known as Meckel's, the Sphenopalatine Ganglion, is a small triangular, reddish-gray body with the apex backwards, situated in the upper portion of the sphenomaxillary fossa, flat in its mesial surface, convex on its lateral, and measures about 5 m.m. in length. It lies in close proximity to the sphenopalatine foramen and just be-

*Read before the Eye, Ear, Nose and Throat Section of the Norfolk County Medical Society.

neath the maxillary branch of the trigeminal nerve. It is regarded as belonging to a series of sympathetic nodes and consists of an interlacement of nerve-fibres in which are embedded numerous sympathetic neurones.

Roots.—The sensory root consists of two and at times three short stout filaments, the sphenopalatine nerves, which pass directly downward from the lower margin of the maxillary nerve to the upper border of the ganglion. While some of the fibres of this root are axones of the sympathetic ganglion cells, the majority are dendrites of the cells of the Gasserian ganglion which pass through in part, but mostly around the ganglion. The motor root is the great superficial petrosal nerve which, in all probability, carries sensory as well as motor fibres.

Arising from the facial nerve in the facial canal, it passes through the hiatus Fallopii and a grove in the petrous portion of the temporal bone and then under the Gasserian ganglion to reach the cartilage occupying the middle lacerated foramen. Here it is joined by the sympathetic root, the great deep petrosal, which is a branch from the carotic plexus. The two great nerves fuse over the cartilage at the middle lacerated foramen to form the Vidian which traverses the Vidian canal to enter the spheno-maxillary fossa to join the nasal ganglion. In its course through the Vidian canal, the Vidian nerve gives off a few nasal branches, composed of trigeminal and sympathetic fibres which supply the pharyngeal ostium of the eustachian tube and the posterior part of the roof of the nose and nasal septum. While in the canal the Vidian receives a filament from the otic ganglion.

Branches.—Ascending or orbital consists of several small twigs which enter the orbit through the inferior orbital (spheno-maxillary) fissure and proceeds within the periosteum to the inner wall of the orbit, passing through the posterior ethmoidal foramen and through the foramina in the suture behind that foramen to be distributed to the mucous membrane which lines the posterior ethmoidal cells and the sphenoidal sinuses.

The internal or nasal branches are derived in part from the inner side of the ganglion, but are also largely made up of fibres which pass from the sphenopalatine branches of the maxillary nerve without traversing the ganglionic substance. They are disposed in two sets, the lateral and the medial posterior superior nasal branches.

The lateral posterior superior nasal branches are six or seven small twigs which pass through the sphenopalatine foramen, and are distributed to the mucous membrane covering the posterior parts of the superior and middle turbinates and to the lining membrane of the posterior ethmoidal cells.

The medial two or three in number pass inward through the sphenopalatine foramen and cross the roof of the nasal fossa to reach the back part of the nasal septum. The largest nerve of the set, the naso-palatine nerve, runs downward and forward in a groove in the vomer to the incisive (anterior-palatine) canal, where it communicates with the nasal branch of the anterior superior alveolar nerve. The two naso-palatine nerves then pass through the foramina of Scarpa in the intermaxillary suture, furnishing twigs to the anterior premaxillary part of the hard palate behind the incisor teeth. Here they communicate with the anterior palatine nerves.

Descending Branches are the great or anterior, the posterior, and the middle (external) palatine nerves. They are in part derived from the ganglion and in part are directly continuous with the sphenopalatine nerves.

The great or anterior palatine nerve arises from the inferior angle of Meckel's ganglion and passes downward through the posterior palatine canal, accompanied by the descending palatine artery. Emerging from the canal at the greater posterior palatine foramen, it divides into two or three branches, which pass forward in grooves in the hard palate and supply the glands and mucous membrane of the hard palate and the gums on the inner aspect of the alveolar border of the upper jaw. During its course through the posterior palatine canal, the anterior palatine nerve gives off the posterior inferior nasal nerves which pass through small openings in the perpendicular plate of the palate bone to supply the mucous membrane covering the posterior part of the inferior turbinate and the adjacent portions of the middle and inferior meatuses of the nose.

The posterior or small palatine nerve passes downward through a lesser palatine foramen and enters the soft palate supplying it and the uvula and tonsil.

The middle palatine nerve, the smallest of

the three, traverses a lesser palatine foramen supplying the tonsil and the adjacent part of the soft palate.

Posterior Branch. — The pharyngeal branch passes backward and inward through the pharyngeal palatine canal distributed to the mucous membrane of the upper part of the pharynx and posterior nares to the opening of the eustachian tube and the lining of the sphenoidal sinuses.

As the nasal ganglion is made up of sensory as well as sympathetic fibres, we naturally would expect a sensory and a sympathetic syndrome, and such is the case. The nasal ganglion by actual measurements lies at times as close as one or two m.m. from the nasal mucosa or may be as deep as seven or nine m.m., or it may lie at times just under the mucosa; hence, we can readily appreciate the fact that it can easily be affected by inflammatory processes of the sphenoidal or posterior ethmoidal sinuses, or extension from the nose proper.

Anatomical Relation. — The nasal ganglion lies in the upper portion of the sphenomaxillary fossa. This fossa is formed above by the wall of the sphenoid sinus and the sphenoidal process of the palate bone, in front by the wall of the maxillary sinus, behind by the anterior surface of the great wing of the sphenoid, and internally by the vertical plate of the palate.

Due to Anatomical Variation, the sphenoidal sinus may form the entire upper boundary and also the posterior boundary, or a post ethmoidal cell may bound the anterior half of the upper part of the fossa. The ganglion is situated high in the spheno-maxillary fossa close to the plane of the sphenopalatine foramen which is accurately placed just posterior to and immediately above the posterior tip of the middle turbinate.

The Neuralgic Syndrome.

Typical Case.—A patient will give a history of a coryza, sometimes mild, and almost forgotten, or one of great severity which produced a post ethmoidal-sphenoidal empyema, later pain began at the root of the nose in or about the eyes, the upper jaw and teeth, sometimes lower jaw and teeth, extending to temple and above the zygoma to the ear, emphasized at the mastoid, but severest at a point 5 cm. back of the tip; thence, reaching backward by way of the occiput and neck, it may extend to the shoulder blade, shoulder (perhaps to the axilla and breast) and, in severe attacks, to the arm, forearm, hand and even the fingers.

There also may be a sense of stiff or aching throat or of pain, oftener itching in the hard palate or pain inside the nasal fossae, or a feeling that the teeth are too long or a metallic sense of taste or scotoma scintillans or salivation; a sense of stuffy ears which inflation will relieve perhaps for only a short time (explained possibly as follows); due to the pain the motor function of the ganglion is injured and the levator palati fail to act properly.

The Sympathetic Syndrome (which is less common) may supplement the previous condition or it may occur alone. It consists chiefly in a vaso-motor and a secretory phenomenon. Like the neuralgic type, inflammation has usually preceded. The patient may be aroused by a slight coryza, that has had little time for development. Regardless of the season, the patient is seized with a severe sneezing and nasal congestion and profuse watery discharge. The internal nose is sensitive. The eyes are reddened and bathed in tears; pupils may even be dilated. Photophobia, accommodation is difficult or impossible; asthma may even be present.

Diagnosis.

First. Cocainization of the nasal ganglion stops the pain of a lesion in the ganglion proper.

Second. Intra-sphenoidal application of cocaine stops the pain of a lesion of the maxillary and vidian.

This is one place where we would expect the X-ray to help us, but in about half the cases it gives negative results. I have seen cases where the nose seemed as near normal as the majority of noses which presented no symptoms—inspection was negative; cocainization and suction negative; transillumination and X-ray negative—and yet the patient complained of the neuralgic syndrome and suffered untold agony. Of course, if a patient complains of neuralgia referable to the nose and we find a purulent sinusitis or polypi, we can understand and appreciate the symptoms of which he complains, and, by transillumination and X-ray, we can arrive at the sinus or sinuses affected, institute treatment and, as a rule, perfect a cure. But when a patient complains, as they sometimes do, of the nerve to

the upper or lower teeth, as they express it, feeling stretched or pulling or burning, or the teeth feeling too long or separating, no wonder we sometimes call them neurasthenics. And I want to say here that I have long since given up the idea that there is such a thing as neurasthenia, per se.

TREATMENT.

Medical: One or more applications of 90 per cent. cocaine to the ganglion area is sometimes curative. Application of 2 per cent. silver nitrate, .4 solution gaseous formaldehyde, .5 phenol with .1 iodine as a wash. In the stubborn cases injection of 5 per cent. phenol alcohol.

The ganglion is cocainized by an applicator (cotton tipped) carrying a drop of saturated (90 per cent.) watery solution of cocaine placed under the tip of middle turbinate. This is allowed to remain five minutes, then it is removed and placed over the sphenopalatine foramen just posterior and above the posterior tip of the middle turbinate and remains five minutes. This procedure should relieve the pain if it is caused by a lesion in or distal to the ganglion; but, if found by past experience that the pain repeatedly returns, then a more radical treatment should be tried. If application of silver or formaldehyde have failed, the 5 per cent. phenol alcohol should be tried. The ganglion area is cocainized as above and, with a straight needle made for the purpose, ½ c.c. of 5 per cent. phenol in 95 per cent. alcohol is injected. Sluder prefers a straight needle and places the point of the needle 2 m.m. anterior to the point in the middle meatus marked by the origin of the posterior tip of the bony middle turbinate directing the point of the needle backward, upward and slightly outward, piercing the anterior wall of the spheno-maxillary fossa and carrying the point of the needle backward .66 cm. Sluder confesses that this sounds easy, but is very hard to accomplish for many reasons, and, judging from the few I have tried, I thoroughly agree with him.

We all know that it is usually the most inaccessible side of the nose that becomes involved, if we are dealing with a one-sided condition (which probably explains itself) due to poor drainage, and besides, if the septum is deflected and the inferior turbinate is situated relatively high and the nose is small or blocked from other causes, we have a very poor chance of placing the needle in the correct place. However, if a straight needle cannot be used we may try a curved one and attempt to go directly into the sphenopalatine foramen. I, for one, like the curved needle, as we can feel the resistance offered or, better, not offered, when tissue alone is pierced, and judge the distance rather than measure the distance we pass or force a needle through a thin plate of bone.

The injection is followed by a slight sense of pain which the patient recognizes as different from his neuralgia and which lasts from two to three hours. Only one untoward consequence has followed injection by Sluder, when the abducens was paralyzed and remained paralyzed for three months.

The injection in old and severe cases may be necessary from three to ten times at intervals of from two to three weeks. Usually, if successful, three times is sufficient.

Surgical: This treatment is resorted to after other methods have failed and is the proper treatment for the cases of hyperplastic sphenoiditis or hyperplastic spheno-ethmoiditis.

But there comes a difficulty in diagnosis. It is not so difficult to diagnose the neurosis, as cocainization will usually relieve the pain, but some cases appear to have a normal nose even after all our aids, examinations, suction, transillumination and X-ray are put to work, but, when a middle turbinectomy is done and the anterior ethmoids are removed, small polypi are found in almost every cell, including the post ethmoids and the sphenoid, and even high up in the naso-frontal duct.

When you operate on a case like this, you do not know when to stop, as each curettement finds diseased tissue and leads you on to other cells involved, and yet, as much as we fear we may overdo, we cannot stop as long as diseased tissue is encountered for fear that what we leave behind might still continue to produce the symptoms. So usually these operations are quite extensive and nerve-racking, as much for the surgeon as for the patient, and perhaps even more, as he knows better the danger and possible consequences.

Each case is a real study in itself and a much more complete history should be taken than we nose and throat men are in the habit of taking. Of course, in some cases, such a radical operation is not necessary; we can lo-

cate the trouble as best we can and attack that, but, if we find more disease after the removal of the supposed cause, are we justified in concluding the operation? I answer no, unless the life of the patient is endangered by continuing.

There are two points that Sluder suggests which I would like to mention, one of which we have noticed often, i. e., the relative frequency of asthma connected with certain types of this condition—nasal asthma, so called. Certain cases seem to bear out the fact that it is the autonomic sympathetic nerves of the nasal ganglion which are involved and which cause the vaso-motor and secretory phenomena and also the pain referred into the neck, shoulder, arm, etc.

The Vidian neuralgia and these referred pains result by virtue of the sympathetic fibres which arborize about cells in the spinal ganglia of the nerves which supply the neck and upper extremity. Also, the anatomical connection of accelerator fibres for the heart and the vaso-motor fibres for the lungs with the ganglia through which the cervical sympathetic passes (lower cervical and first thoracic) explains some of the cases of asthma of nasal origin, and the path of the impulses is from the nasal ganglion through the Vidian upper, middle and lower cervical, and first thoracic to the heart and lung fibres.

I have seen five cases in all during the last year which I have classed as "Nasal Ganglion Neurosis." I shall give briefly the history, diagnosis, treatment and results of a few cases.

Case No. 1. Miss D; aged 31.

Past history unimportant prior to 1918. Patient had severe attack of "flu" in 1918. Following the attack pain occurred over left eye, at first of a dull character, radiated to zygoma, passed to lower jaw, and at times to left ear. Left ear-drum felt as if it were drawn inward by suction. The pain in the lower jaw was the most annoying, as the teeth felt as if they were too high and at times there was a dull toothache. She consulted a dentist, who assured her that the teeth were in good condition. Later, however, one tooth became abscessed and was pulled with no apparent relief. Four months later, the pain having continued, she developed a feeling as if the head were in a vice with more or less localization of pain between the tip of the left mastoid and the ramus lower maxilla.

She consulted a doctor at Hartford, Conn., who sent her to a surgeon in New Britton, Conn., for gasserianectomy. She was under observation for over two weeks, and she tells me that one day she was prepared for operation, but the surgeon forgot his instruments and consequently could not perform the operation. The next day, after more careful questioning, he decided he could not make himself believe she had tic douloureux and was discharged after a month's stay unbenefited, except perhaps for the rest in bed.

She then came home and consulted a dentist who, after an X-ray of the teeth, pulled a molar in the left lower jaw. At this time, burning of the gums of the upper jaw occurred and a feeling of the incisor being too long and a terrible itching of the roof of the mouth. She finally consulted an internist of the city who, after making a complete examination, including X-ray of sinuses, concluded that she had left ethmoiditis and possibly left sphenoiditis. He referred her to me in October and, as she was wearing glasses, R-1.25 = —1.25 axis 95 20/40 plus; left plano. I became suspicious, as the left glass was a plano. A refraction under drops was done and R-1.75 axis 1.00 = 20/10 and left with plano, giving 20/10, which, although it gave better vision, did not relieve her symptoms.

Nose—Inspection normal in appearance, slight deflection of quadralateral cartilage high up on left, almost hiding left middle turbinate. No pus on suction. Transillumination negative. I found that I could entirely relieve the pain by an application of cocaine over the sphenopalatine foramen. I injected 7 m. of 5 per cent. phenol alcohol and, when she returned two days later, she reported she was better. That night and the next she slept well for the first time in months, and the drawing sensation of the nerve in the left lower jaw has to date disappeared. Four days later there was return of pain, and attempted to inject ganglion but failed, as most of the fluid passed down the pharynx. Pain was so severe I had to give codeine, grains ½ p. r. n.

Four days later I did a local left middle turbinectomy and sphenoid exenteration, enlarged the naso-frontal duct and opened the sphenoid.

Findings: The scroll of the middle turbinate

was very hard, suggestive of rarefying osteitis and a few polypi were found in the sphenoid. From this time on for several days at a time she was almost entirely free of pain. Although I had made the sphenoidal opening as large as possible, it daily grew smaller, so on the 22d of December I removed all of the anterior wall of the sphenoid and broke up a few adhesions and removed a few of the anterior ethmoid cells around the naso-frontal duct that I had failed to remove at the first operation. For over a week the patient was free of pain. A few days later pain developed, but not as severe as formerly.

I tried violet rays without results. At the time there was a slight crusting around the naso-frontal duct and, on washing out the left frontal sinus, a solid blood-stained mucous clot was expelled, and it was necessary to remove this about every two days to relieve the pain over the left eye, which was more or less constant and was the only pain complained of, except at times a slight pain in the lower jaw.

Much to my sorrow the right side began to pain in the same way as the left had started, and I was determined to try and relieve this as quickly as possible; I did the same operation on the right as I had done on the left, and it seemed to relieve all the right sided symptoms. Today, although she is not cured, she says she is almost well and is sure she will be entirely relieved. I hope so, but would dislike to give a prognosis. She says she knows she would have been dead by this time if she had not found relief.

Case No. 2. Mrs. H; aged 45. Referred to me for headache, gives a history of scabby nose since childhood, but right sided headache for several months beginning after arising in morning and lasting until 5 p. m., as a rule.

Examination of nose showed right side very large; filled with scabs and mucous membrane bathed in a purulent discharge. Marked atrophic condition on right side was so marked that middle turbinate could scarcely be distinguished from the bulla cartilaginous septum deflected to the left. Left side showed no apparent scabs, but marked catarrhal condition of lining membrane.

Cleansed nose; used suction which produced frightful pain which lasted for twelve hours. No pus expelled, but I could not but think I could see a little drainage from the anterior ethmoid cells. Probed frontal which was open. Transillumination, negative, except right frontal transilluminated poorly. X-ray was entirely negative except it showed very large ethmoid cells. On March 2d, I punctured right antrum under local anaesthetic and washed it, return clear. Removed with Sluder knife middle turbinate high up near cribriform plate, ethmoid cells, opened splenoid and enlarged naso-frontal duct. Each cell was filled with a small polypus. Here was an ozena secondary to a hyperplastic spheno-ethmoiditis. This sounds paradoxical, I admit, but such was the case as far as I can determine.

She had no pain whatever after operation except on the fifth day when I removed a large blood pus cast from the right side. Her scabby condition has lessened to a large extent and not a suggestion of any pain has yet occurred. Ten days after operation I noticed the right sphenoid was filled with several large polypi to which I applied saturated solution of silver nitrate, and ten days later, when I saw her last, the polypi had entirely disappeared.

Case No. 3. Mrs. G. W. H., aged 33. Married, mother of two healthy children.

Past history unimportant, except that she gives a history of having had influenza, to which she attributes her present trouble. At the time of this sickness she had rather severe frontal headache and several asthmatic attacks. After apparent recovery there developed a constant, dull frontal headache, chiefly over left eye, temple, left side of head, localizing under left ear between tip of mastoid and ramus of inferior maxilla. The pain at times was so intense she could not attend to her household duties and spent most of her time in bed. At this time probably the most annoying symptoms were light flashes before her eyes, even in a dark room with closed lids. She also complained of hot flushes to face, as she expressed it.

Nasal Examination: Inspection showed slight deflection of septum; no evidence of nasal discharge. Transillumination negative; suction negative. From her symptoms alone, spheno-ethmoiditis was suspected and she was sent for X-ray examination. Report showed slight cloudiness of right frontal and some increased density of left ethmoid. I saw her first on March 30, 1920, and operated on her

September 28, 1920, under local anaesthesia. Performed a double middle turbinectomy, double ethmoidectomy, opened both sphenoids and enlarged both naso-frontal ducts. Tissue removed showed macroscopically a hyperplastic condition, small polypi being found in almost every ethmoid cell. I was unable to do as thorough an operation as I would like to have done, as the patient became very nervous and I was compelled to stop before I had completed the operation. She spent a week at the hospital and for several months was much improved. After returning to her home in the county, eight days after operation, she had a severe nasal hemorrhage which necessitated her return to the hospital. About a month later, I did a refraction under a mydriatic and found a simple hyperopic astigmatism which I corrected with proper glasses. Nasal examination at this time showed three rather large polypi in right ethmoidal region. She returned home and for two months suffered with pain. On March 8th, I took especial pains to thoroughly cocainize the nose with cocaine mud and removed polypi and the remains of posterior tips of middle turbinates. Removed a few posterior ethmoid cells, enlarged sphenoid openings, and enlarged left naso-frontal duct, but could not locate right naso-frontal duct which I had previously enlarged and which I probed immediately before operation.

Patient bled profusely, which necessitated packing. She complained of much pain during the night and bled slightly. Removed packing after 24 hours; patient complained of extreme photophobia and during the next few days ran a slight temperature, the highest reaching 101; complained of severe headache and flashes of light before eyes. Patient thoughtlessly blew nose and several hours later developed left earache. The drum was red and retracted; relieved by one inflation. Several days later photophobia and pain entirely disappeared and the patient was discharged. Received a letter from her a few days ago saying she sleeps soundly twelve hours each night and one or two hours during the day. She says her appetite is better than it has been for years, and that she has been almost entirely free from pain except at times a dull ache over the left eye.

Case No. 4. Widow; aged 45.

Past history: Periodic headache regularly several times a month, so severe that patient had to remain in bed. These attacks are accompanied with nausea and sometimes vomiting. Says she had an abdominal operation performed a few years ago with the hope that the headache would be relieved. Pain at the time of attack is so severe that she has had to resort to morphine in large doses for partial relief.

Sent to me by a local physician with the request to examine sinuses. At this time she had no headache. On examination, the nose appeared as normal as you usually see them, except that there was a slight blocking of the middle turbinate region due to a septal deflection and a rather narrow nose. Suction and transillumination were negative; this was Thursday, January 20th, and she said she would have a headache on the following Tuesday; I felt like saying, "Well, have it on Tuesday." She did not miss it far, as she called me on Thursday, January 27th, about 8:30 A. M. I found patient in bed with a towel tied tightly around her head, suffering so severely that she could scarcely keep still. The pain was located over the left eye and temple and extended back of the left ear and down the neck. Temperature normal, pulse 80. I sprayed nose with 4 per cent. cocaine, waited awhile and tried to applicate over the nasal ganglion, but the middle turbinate seemed attached to septum and I had to use force to reach region of the ganglion. I used 10 per cent. cocaine, the strongest I had with me at the time. I was able only to slightly relieve the pain. I left a tablet of morphine, grs. ¼, to be taken if pain continued and advised the use of a hot water bag. I returned at 1:30 p. m., and applicated with 20 per cent. cocaine. While attempting to applicate over the ganglion area, I felt the applicator slip deep into the nose and I thought at the time that I had accidentally slipped into the ostium of the left sphenoid. I removed applicator and the patient said, "I smell an awful odor like gas," and a second later I placed another applicator in position and I also got the odor, which nearly knocked me down. I must have released retained gas in the sphenoid. A few minutes later the patient suddenly sat up in bed, tore the bandage from her head and looking at me as if demented, said, "I haven't got a pain." Her mother standing by was greatly alarmed and insisted that she was dying. I

assured her her daughter was all right. The pain was relieved for about an hour, but returned to a slight degree and lasted several hours. On the 19th she had a similar headache relieved by cocainization. On the 28th, I did a local left middle turbinectomy, ethmoid exenteration, opened sphenoid and enlarged the naso-frontal duct. I found no macroscopic evidence of disease; she suffered severe pain for several days after the operation. Has had two slight headaches since, but they were not sufficient to confine her to bed. Just a few days ago she had one rather bad headache, which seems to have been brought on by rather undue excitement. I am very much in doubt about the final result of this case.

After seeing a few of these cases, we no longer dread purulent sinus cases so much, because here we have something definite to work on and, as long as we can keep up sufficient drainage, we can usually allay the pain by suction alone. If the case is acute, we can usually perfect a cure without operation, in a short time. Unless some severe complication arises, which is relatively rare during the course of treatment, we usually have nothing to fear. But when we get a stubborn case of nasal ganglion neurosis, we are not at all sure of our ultimate results and far from sure of a permanent cure. However, knowing how much these patients suffer, we should not be discouraged if we do not entirely cure them. They appreciate improvement more than you would imagine, as they have usually been the rounds and some have had severe operations far distant from the site involved.

How many of us in the past have had patients sent to us from family physicians with the history of a dull, almost continuous headache or sharp pain over the eye, in the temple, shoulder, etc., with a request for examination of the sinus, and our report, even after a thorough examination, including an X-ray, shows no evidence of sinus trouble found. We have even had them return and, for fear that the eyes were at fault, we have prescribed and advised them to wear glasses for an error from which, under ordinary conditions, we would expect no symptoms, and we have, perhaps, gone so far as to attribute the headaches to the tonsils, which were only slightly diseased, and which after removal did not relieve the symptoms. I feel sure that I for one have seen a few cases at least which I now feel were cases of nasal ganglion neurosis.

We have all been struck by the fact that some cases of sinusitis are accompanied with depression out of all proportion to the severity of the disease and the area involved; but the cases of nasal ganglion neurosis are more depressed, as a rule, than the ordinary sinus cases, and I venture to say that if they could obtain narcotics they would all be drug addicts.

I have had them tell me that they would take anything, and at times they had suffered so long that they were tempted to commit suicide. This we can well understand, as the pain at times is almost unbearable and in extreme cases never entirely absent.

We must make ourselves recognize this condition, as it is much more common than we might imagine, and we should be grateful to Dr. Sluder for his careful presentation of this subject in his book, "Headaches and Eye Disorders of Nasal Origin."

New Monroe Building.

RESULTS OF OPERATION UPON ELEVEN HUNDRED WOMEN FOR DISEASE OF THE PELVIC ORGANS AND OUTLET.*

(Standardization of the Surgeon)

By G. PAUL LaROQUE, M. D., F. A. C. S., Richmond, Va

The present report is solely of *results* of operation upon *consecutive* cases of pelvic disease; none have been omitted. In no case have we declined to operate on account of the desperate condition of the patient, and in no case needing surgery has operation been postponed more than a short period of one day to two weeks for preparatory treatment and the opportune time. No one has died while *waiting* for operation; nor *without* operation from any cause save extensive and inoperable cancer.

Of 1100 patients operated upon:

Eighty per cent. required abdominal operation for pathology in the uterus, tubes and ovaries.

Seventy-five per cent. required operation upon the cervix, vagina and vulva.

*Read before the Richmond Academy of Medicine and Surgery, May 24, 1921.

Sixty to sixty-five per cent. required operation for pathology in both locations, abdomen and vagina.

Eight per cent. to ten per cent. required operation also upon the rectum and anus; and of women coming for operation upon the rectum and anus, over fifty per cent. need operation also for disease of the pelvic organs.

Fifty per cent. of women with pelvic organ disease also have disease of the appendix, and over fifty per cent of women coming to operation for appendicitis, between the ages of puberty and the menopause, also have disease of the pelvic organs.

Approximately five per cent. of women operated upon for pelvic disease also have definite pathology of the urinary organs; it is impossible to estimate the number of women with symptoms and disease of the urinary apparatus who need operation for pathology of the pelvic organs.

More than five per cent of women in this series of cases have needed operation for gall-bladder disease with or without stones; and over fifty per cent. of women with gall-bladder disease also have disease of the pelvic organs.

More than five per cent. of women operated upon for pelvic disease were operated upon at the same time for inguinal, femoral or umbilical hernia; and eighty per cent. of women operated upon for hernia have also needed operations for pelvic disease at the same time. Obesity, as a surgical complication has been recorded only in those cases in which, on account of excessive fat in the abdominal wall, it has seemed wise to remove by lipectomy a sufficiently large piece to render the intra-abdominal pathology more easily accessible and operation safer. This has been done in approximately two per cent. of the cases.

The present series of cases does not include operations on account of eclampsia, placenta previa, contracted pelvis or other obstetric indications, nor on account of such systemic conditions as tuberculosis and pernicious vomiting. These will be reported at another time as a separate series.

Women of child-bearing age and married have constituted more than half of the total number of women in the present series, and in approximately ten per cent. of these their previously existing pelvic disease has been complicated by pregnancy.

In the present series there were one of hysterectomy and two of myomectomy for fibroids of the uterus upon women bleeding furiously in labor; two of hysterectomy on account of incarceration and suppuration of the uterus and tubes during pregnancy; one removal of a large ovarian cyst during pregnancy; one hysterotomy for incomplete miscarriage from one side of a double uterus; sixteen cases of ruptured tubal pregnancy, one of an almost full term foetus, the others of two to five months; one suture of ruptured uterus during labor at term; and many cases of removal of retained material following miscarriage from displaced and inflamed uteri and in the presence of tube inflammation, ovarian cysts and fibroids of the uterus.

Approximately three per cent. of patients in this series have suffered with anaemia of less than fifty per cent. hemoglobin. There have been recorded a considerable number of heart, lung and kidney lesions, malaria, lactation, hookworm disease, menopause and other psychoses, neurasthenia (?), hysteria (?), old age, and other non-surgical diseases. Heart and kidney lesions have produced an amount of fear of operations totally unjustified by the results. I have known of only one death which by any stretch of the imagination could be attributed to these diseases and this was a case of dilatation of the heart secondary to acute dilatation of the stomach in a woman three days after hysterectomy for fibroids. Hyperthyroidism adds some risk as shown by one death in this series from hyperthyroidism following a simple easy operation for pelvic disease. Milder forms of hyperthyroidism are present in a large number of women with pelvic pathology and are commonly benefited by operation for the cure of pelvic disease. Two or three true diabetics have been held under treatment for this disease for an appropriate time with perfect satisfaction in the relief without complications of their pelvic disease and without bad effect upon diabetes.

Dilatation of cervix and removal of loose material from uterus 880
All but 1% of these required other operations.
Repair, amputation and destructive cauterization of cervix 365

75% of these received also abdominal operations at the same time.

Repair of perineum 330
For rectocele and cystocele 314
For rectocele and torn sphincter ani..... 8
For rectocele and rectal fistula 7
For vagino-vesical fistula 1
For complete prolapse of uterus, bladder and rectum 3
90% of these required other operations at the same time and 70% of them for abdominal disease.

Miscellaneous operations upon the vulva, urethra, rectum and anus for vulva cysts, abscesses, urethral caruncle, hemorrhoids, fistula in ano, anal ulcer and ischia rectal abscess, approximately 100

Ligament suture of uterus to correct displacement 550
Over 80% of these received additional operations at same time.

Removal of tubes (independently of hysterectomy) 175
Of one tube..... 135
Of both tubes 40
Suppurating at time of operation..... 125
Tubal pregnancy 16
Nearly 100 per cent of these have required additional operations at the time of salpingectomy, for such pre-existing pathology as lacerated cervix, displaced uterus, ovarian cysts, fibroids, etc.
Five of the above cases had tuberculosis of tubes (bilateral), all the others were of pyogenic infection.

Removal of ovaries 214, and excision of cysts 106 320
Simple non-inflammatory 210
Suppurating at time of operation..... 110
Two of the ovarian tumors were malignant, two hematoma, six or eight were twisted on their pedicle, seven were a part of pan-hysterectomy for cancer of the uterus.
In all but about 40 of the total 320 women, I have succeeded in preserving at least a portion of one ovary.

Removal of uterus and uterine tumors..... 225
Abdominal route 200
Complete 10
For cancer 8
Obvious 3
Microscopic 5
For complete lac. cervix 2
(With inflam. disease of uterus and tubes).
Subtotal 190
For fibroids 175
(With and without suppuration)
For suppurative disease 15
(Without fibroids)
Vaginal route 3
All for complete prolapse in old women.
Removal of fibroids and other tumors, leaving uterus 25
Additional operations in cases requiring hysterectomy included, especially high amputation (usually with electric cautery), of the torn and infected cervix (25% of cases), removal of ovarian cysts (over 50% of fibroid cases), etc.

Operations for pelvic abscess, suppurating tubes and ovaries 250
Palliative abdominal puncture and drainage 1
Removal of one or both tubes and ovaries.. 200
Removal of tubes and ovaries and suspension uterus 175
Removal of tubes and ovaries and uterus... 65
Repair or amputation (electric cautery) of cervix 50
Suture of ulcerated holes in bowel..... 12
Wounds are closed without drainage in suppurative disease in 60% of cases, with drainage in 40% of cases.

Additional abdominal operations other than those upon pelvic organs, include:
Appendectomy, all cases unless it has been removed previously, or serious shock exists—approximately 850
(In over 50% of women with pelvic disease the appendix is diseased).
Gall bladder operations (usually simple drainage) 55
Repair of abdominal hernia 65
Suture of bowel ulcerations 12
Miscellaneous abdominal operations include an occasional suture of movable kidney and caecum, removal of excessive fat (2% of cases), etc.

There have been 13 deaths in the 1100 cases: 8 of these occurred in the first 300 cases; 4 in the second 300 cases and 1 in the last 500 cases.

All cases are propped up in bed whenever they please, usually after 5 to 7 days and, as soon as they feel equal to the trip after getting out of bed, they go home. There are many real advantages, other than economic, to the patient in getting up and out of the hospital early after operation, and we are shortening this time steadily and with great satisfaction.

603 *East Grace Street.*

DRUG THERAPY IN EPILEPSY.*

By VICTOR R. SMALL, M. D., Raleigh, N. C.
Assistant Physician, Dix Hill State Hospital.

The student of Grecian art and science is cognizant of the fact that about the year 400 B. C., Hippocrates wrote a description of the disease called epilepsy, characteristically describing the symptom-complex with such accuracy that to later writers was left little more than the adding of a few details. Yet, long before the time of this famous Greek, we find mention of this affliction in civil writings. We know that it existed among the ancients, for the earliest records speak of it. Through the following centuries, down to the present time,

*Read before Section on Therapeutics, Medical Society of State of North Carolina, sixty-eighth session, Pinehurst, N. C., April 26-28, 1921.

every generation has known it and, among civilized peoples at least, very few persons have not seen it, recognized it, and had stamped indelibly on their minds a mental picture of its manifestations. It is possible that through the ages more people have witnessed epileptic convulsions than have come in contact with any other disease, with the probable exception of the usual infectious diseases of childhood. Many students have given it attention and yet today there is probably no physical or mental disorder, the etiology of which we know less, and for which our treatment is so much based on conjecture and fanciful speculation.

For centuries efforts had been made to treat the epilepsies by sorcery, experimental surgery and empiric medicine. No doubt, the early followers of Aesculapius, who regarded epilepsy as a disease due to the retention of semen and who prescribed coitus for relief, found that their treatment met with greater favor among those afflicted than did Hector Boethius and others, who, recommended castration. Galen took the opposite view as to etiology, owing to the fact that seizures often came on during coitus, and attributed the cause to sexual excesses. His followers, therefore, recommended abstinence from sexual intercourse. We read that in the latter part of the sixteenth century, M. Hedoin, physician to the king of France, declared as being most efficacious, a remedy "prepared from various roots and the skull of a man who had died a violent death." Until recently, "snakes' heads soaked in rum" held high reputation in Australia and from this practice could probably be traced the advocacy of crotalin which was extensively tried in our own country within the memory of all.

Thus, from time remote to a very recent date, epilepsy has been considered a disease entity and has been theoretically attributed, first to one cause, then to another, and the treatment has been more varied still. We have today advanced beyond the age of sorcery but we have not entirely abandoned empiric formulas and experimentation is still rife in surgery. On many points we are as much in the dark as ever before and today we have no rational basis for the treatment of more than ninety per cent. of the cases of epilepsy.

The advancement that has been made has brought us to the recognition of the fact that epilepsy is not a disease entity, having always the same etiology, but rather that it is a symptom-complex that may be a manifestation of widely different etiological factors in different individuals. Thus we have learned to recognize certain cases as being the results of physical traumatism; usually head injuries. We know others to be due to certain infectious diseases; most frequently syphilis. Endocrine dyscrasias undoubtedly account for a certain number of cases, and, when we happily have been able to establish the identity of some etiological factor, we know that we are dealing with a true case of symptomatic epilepsy and our treatment can be made specific. Yet, when after painstaking efforts, all the true symptomatic cases have been eliminated from any group of epileptics, there still remain some ninety odd per cent. of the cases that must be put down as "idiopathic" and for them our treatment must of necessity be symptomatic. Eventually, no doubt, we shall be able to eliminate many of the so-called "idiopathic" cases. We are just beginning to seek a cause for this disorder within the psyche of the individual and we may be astounded at what may ultimately be established as emanating from this source.

The chief manifestations encountered in the epileptic, aside from his ill-balanced, unstable, psychopathic personality basis, are: first, the convulsions themselves, second, the periods of mental disturbance preceding or following the attacks, and third, the terminal dementia. In the treatment of "idiopathic" epilepsy, this triad should ever be borne in mind and we should endeavor to alleviate not only the first but the second as well and at the same time attempt to stay the progressing mental deterioration. However, the symptomatic treatment for the convulsions themselves is the most important and, if they can be checked, we often do not have to deal with the periodic mental disturbances and the patients do not dement so rapidly.

If we attempt to correct the underlying disorders of the psyche, it is necessary to use psychic methods, but, as this paper was intended to treat of drug therapy, it will be so limited.

One axiom to bear in mind in the care of these cases is that it is always bad for the patient to become constipated. A majority of these cases have a tendency to become so un-

less closely watched, and in this we should not be negligent. The writer does not favor the continuous giving of mild laxatives, for often the bowel elimination will not be thorough even by their help. The salines are better and small doses of magnesium sulphate may be given twice each week or in some cases, every other morning. It is well to occasionally change the saline used and yet absolute dependence should not be placed on the salines alone. At intervals of not less than a week, and not greater than two weeks, the patient should have a more drastic purge. One or two compound cathartic pills, containing as they do, calomel, colocynth, jalap and gamboge, do very well, or often, better still, a dose of calomel itself; not a homeopathic broken dose of six or eight tablets of one-tenth grain each, but from five to ten grains, given in broken dosage, if you will. Other things being equal, the patient will have fewer convulsions if elimination by the bowel is ever free.,

When we find a case that has suddenly begun having convulsions so frequently that there is a threatened development, or the actual existence of "status epilepticus," the chances are that we are dealing with a patient who, for several days at least, has not been eliminating well. Here we cannot wait to obtain action by drug catharsis but must resort to enemas. These should be copious, given by gravity, and as high as possible. When the enema has been expelled, if the attacks have not ceased, our next step should be rectal administration of paraldehyde. In the writer's opinion, there is no drug in our medical armamentarium that is so efficient in these conditions and in his experience it has proved effective in one hundred per cent. of cases. Because of its characteristic burning taste and odor and its irritating effects on the stomach, it is better to give per rectum. Apparently, absorption is more rapid when it is so given. For adults, the rectal dose should be at least four drams, diluted in one-half pint of warm water or salt solution. This should also be given high into the bowel. Usually, one such administration is sufficient but, if necessary, it may be safely repeated after three hours or sometimes after a shorter interval. It is safe to push the drug until results are obtained and so long as the patient is having convulsions he has not had too much paraldehyde. We have at times found it necessary to control the convulsions of "status" in children with chloroform until the paraldehyde takes effect. Generally, this necessary control is of short duration for, when properly given, paraldehyde generally takes effect within from fifteen to thirty minutes.

In 1889, Hare stated in his essay on epilepsy, [1]which essay was awarded a prize of four thousand francs by the Academie Royale de Medicine de Belgique, that; " it is to be laid down as a rule that the bromide treatment of epilepsy is 'par excellence,' the treatment employed on every occasion. **** Its use may be said to be indicated in every case of the disease." It is doubtful if this distinguished author, who is a recognized authority on therapeutics, would entertain this view today for, though the thirty odd years that have elapsed since that paper was written have not been especially gainful in regard to the knowledge obtained in the treatment of these cases, yet we have learned the fallacy of prolonged bromide therapy. Anyone who has observed a number of cases in which an attempted control has been made with the bromides, either alone or combined with chloral hydrate, is aware that the temporary beneficial results are more than offset by the resulting languid, drowsy, stuporous condition of the patient, his impaired mentality, and the hastening of his terminal dementia.

In a paper read before the twenty-third session of the Tri-State Medical Society of the Carolinas and Virginia,[2] the writer spoke of the value of luminal as a drug that may be given over a long period of time. The idea of using this drug was not original with him but was suggested by reports of Hoven,[3] Grinker,[4] and others. After reading the favorable comments on the value of this drug in these conditions, it was decided to try it on a series of cases at the North Carolina State Colony. Fifty cases were selected. These cases varied in age from nine to forty-five years. All were cases of so-called "idopathic" epilepsy and in no case was there a history of traumatism or any evidences either of syphilis or of disturbances of the glands of internal secretion. The urine was carefully examined before the beginning of the administration and, as a routine procedure, every two weeks thereafter. No case showing the presence of albumin or casts was started on the drug and in no case has an

albuminuria or other evidences of kidney irritation developed. As a routine method we gave each patient one tablet, containing one and one-half grains of the drug, at bedtime. A few cases in which results were most striking are as follows:

Case 1. S. B., female, age 16. Attacks since the age of 10. All major attacks and the average number per month before luminal administration was 23. Has been taking luminal for thirteen months and has had no attacks since taking the first dose of the drug. Has gained fifteen pounds and is mentally very much brighter.

Case 2. S. M., male, age 13. Had been subject to attacks for one year before being started on luminal. Had an average of 17 attacks per month same being about equally divided between the "grand-mal" and "petit-mal" types. Chiefly nocturnal. Has been taking luminal four months and during this interval has had no attacks. Physically and mentally is very much improved.

Case 3. M. McQ., female, age 34. Attacks since the age of 16. All major attacks and the average number per month before luminal administration was 3. No seizures during the twelve and one-half months that she has been taking the drug.

Case 4. M. B., female, age 37. Began having convulsions at the age of 20. Has been in the institution for five years and, while there, has been subject to series of attacks of from four to ten each menstrual period. All attacks of the "grand-mal" type. Following each series of convulsions there would always be a period of marked mental disturbance which would last for about a week. For three months

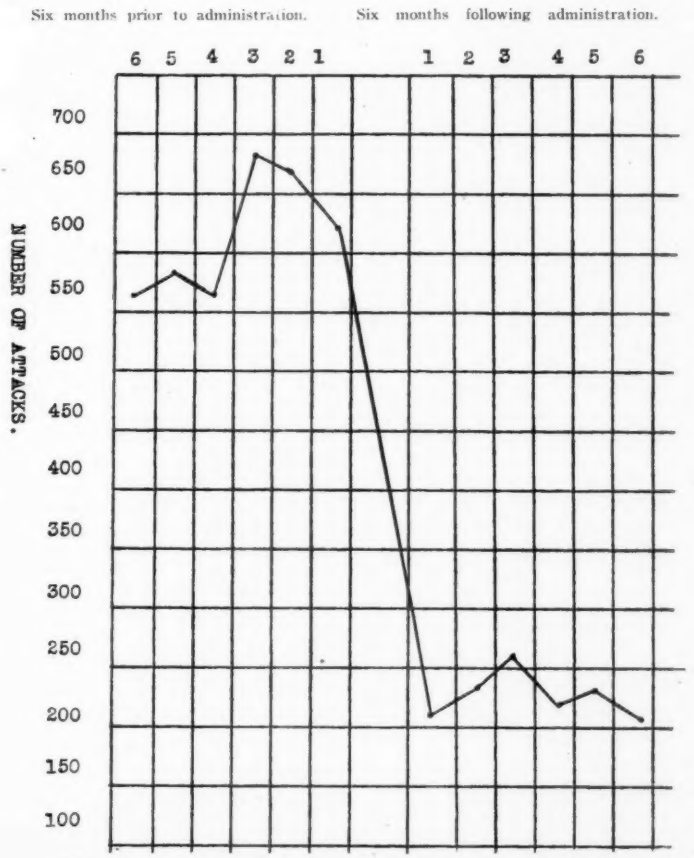


Chart showing decrease in whole number of attacks in a series of fifty cases of "idiopathic" epilepsy, treated with luminal.

after being started on luminal she had no attacks. Then had two very light attacks at each of the two following menstrual periods. No attacks during the past four months. At no time since taking luminal has the patient experienced any of her usual periodic states of confusion and excitement.

Case 5. A. P., female, age 17. Attacks since the age of 2. During the past three years this patient had been having from 3 to 10 hard convulsions in the course of each twenty-four hours. The average number per month during a period of one year prior to taking luminal was 156. Her mentality was almost continuously clouded and she had deteriorated to the point where it was necessary to care for her as for an infant. Luminal has benefited this patient to the extent that she has gained twenty-four pounds in weight, is up and about the ward and is very much brighter. At present she spends a great deal of her time at drawing, in which she is very interested, and at which she has shown some talent. She now has an average of three attacks each week but, whereas formerly all her attacks were hard major epileptic convulsions, they are now all very light "petit-mal" attacks.

These are a few of the cases in which the results of luminal therapy have been most pronounced but from the list other cases could be cited in which the effects have been as striking.

In this series, however, there were ten cases, or twenty per cent. of the whole number, in which there was no appreciable change, either in the number or character of the convulsions. All other patients showed a decided change in this respect, either the convulsions becoming less frequent or the attacks becoming much lighter, or both. In some they disappeared entirely. In several cases, as in Case 5 above, the attacks were entirely changed from the "grand-mal" to the "petit-mal" type. All patients showed a decided improvement in mentality in that they became much brighter and the periodic mental disturbances and clouded states were fewer and of shorter duration or had entirely disappeared. Thus, in eighty per cent. of the cases of this series there has been an improvement and the entire triad of cardinal manifestation, i. e.; the convulsions, the clouded mental states, and the terminal dementia, has been beneficially affected.

What the ultimate results will be, time alone will tell. Our experience with this drug has practically all been within the past year and this comparatively short experience does not permit of prognostication. However, the results so far obtained, merit a trial for this drug in established "idiopathic" cases of epilepsy.

CONCLUSIONS.

1. Before attempting treatment of any epileptic condition, an effort should be made to establish the disorder as being either symptomatic or "idiopathic." If it belongs in the former class the treatment should be specific; if in the latter class, the treatment is necessarily symptomatic.

2. In "idiopathic" cases the factor of constipation should receive attention. Treatment should be directed toward the three cardinal manifestations of the disorder, viz; convulsions, clouded mental states, and dementia.

3. For "status", paraldehyde is the drug of choice and should be given per rectum.

4. For the "cardinal triad", luminal therapy should be given a trial. In the writer's series of fifty cases, eighty per cent. responded well to this treatment.

1 Hare, H. A.; Epilepsy; Its Pathology and Treatment, F. A. Davis, Pub., Phil. and London; 1890.
2 Small, V. R.; Treatment of the Epileptic Insane; Southern Medicine and Surgery, May, 1921.
3 Hoven, Henry; Bul. de la Soc. de Med. Ment. d Belgique, No. 171, 1913.
4 Grinker, Julius; Experiences with Luminal in Epilepsy; Journal Amer. Med. Ass'n., 75: 588, Aug. 28, 1920.

CONSTIPATION.*

By GEORGE P. HAMNER, M. D., Lynchburg, Va.

This *bete noire* of humanity is probably the most prevalent of all of the minor ills of mankind with which we have to deal in the present day. But in classing it with the minor ailments, it is not the intention of the writer to minimize its far-reaching and frequently grave consequences when neglected or when it becomes complicated with other diseases.

Constipation is a condition that may arise from many concurrent causes, and there are many and various forms of this disease, and I feel that it can be rightfully and legitimately classed as a disease. It may be that a spastic condition of the colon or both colon and lower ileum are the primary and sole cause in some cases, or stasis of both colon and ileum or colon alone, enteroptosis, coloptosis, or even a spastic contraction of the sphincter ani alone. In this

*Read before the meeting of South Piedmont Medical Society in Lynchburg, Va., April 19, 1921.

last condition, I have seen quick relief from a simple dilation of the rectum, either under ether or more gradually by some form of mechanical dilator.

Of course, there is always the possibility of a mechanical obstruction either from within or without the alimentary tract proper, growths, tumors, scars, contractures, adhesive bands and strictures that interfere with the rhythm of peristalsis or the passage of faecal matter. But after all of these causes are carefully weighed and considered, I feel safe in asserting that by far the great majority of cases of constipation have their origin in indiscretion in diet and careless habits. And, allow me to state at this point, that indiscretion in diet in this age is in a measure unavoidable. Now to speak of an unavoidable indiscretion sounds ambiguous but such is true when we take seriously into account the forms in which many of our foodstuffs are prepared and marketed. The chief one, for instance, that produced from grain, and commonly called the "staff of life," is rolled and pressed, and bolted until reduced to a mere starchy mass (bolted flour and meal), with nothing left in it to stimulate peristalsis and very little to nourish. Many other foods that tend to retard rather than stimulate peristalsis could be enumerated were the time taken to do so.

Again, all kinds of sweets and confections are produced and marketed in a greater variety of attractive forms and in much more abundance today than ever before in the history of the world. It has been long known that overindulgence in sweets is conducive to constipation both within themselves and as a factor in largely inhibiting the appetite for more stable and nourishing foods.

All of these lead up to the principal cause of the vast majority of the cases of simple constipation, which is neglect. And carelessness or neglect is first superinduced by the lack of a call; or if a call, it is not sufficiently urgent to demand immediate response—a peristaltic action partially or wholly inhibited. The call becomes weaker and weaker day by day, and the patient, by neglect and the placing of some other duty first, for which an easy excuse is invented in this age of hurry and stress, soon finds that he has no desire to go to stool unless a purgative has been taken to whip up his sluggish bowels. Then, the purgative habit is formed and peristalsis lies down on the job and waits for the purgative, with a complete picture of chronic constipation accompanied by a train of symptoms to which we have all listened long and patiently.

Still, there may be constipation (as Hurst sets forth) that is not necessarily a condition of infrequent defecation, but rather of insufficient defecation. In such cases, which are the exception rather than the rule, there may be as many as two actions a day and still there will remain behind sufficient toxic material to give all of the symptoms of constipation. This may be demonstrated by colonic flushing and bringing away this fecal matter which had not passed with the movements.

Now the vague and various symptoms which accompany cases of chronic constipation are too familiar to us all to merit renumerating here, but it is imperative to be reminded that, if the condition is allowed to continue unrelieved, many of these symptoms become of a more or less permanent character and tend to invalidism, and especially to that form that none of us cares to encounter if it is possible to avoid, neurasthenia.

Now what are we going to do with a case of chronic constipation? Give it a purgative, or a laxative, if you wish to call it that, and let it go? Yes, if you want to lose that patient from your calling list, this is a good way to do it. But, if you want to retain your patient and incur about as much gratitude as one usually expects to receive upon a good result, you will have to do more than give a Rx.

The first point is to try to get at the real cause of the condition in this particular case, by a brief but comprehensive history, by stool examinations, and by the aid of the roentgenologist, who can often be of much value to you. You may not be able in every case to put your finger right on the cause but, if you can, you are that much to the good; if you cannot, why you have to proceed as best you can anyway.

When I find a case of simple though severe constipation and can satisfy myself that there is no mechanical obstruction, abnormal position or permanent stasis of the bowels, my first object is to impress the patient that I must have co-operation in the case, and that this is absolutely necessary to effect relief. I then tell him that I am going to discontinue drugs as soon as possible. This is to get the mind away from the necessity of laxatives. I then outline

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a diet and demand that he follow it faithfully. The regime is something like this: Take a pint of Bedford Magnesia water, or a smaller quantity of French Lick, or any of the magnesia waters the first thing upon rising in the morning; then a turn in the fresh air before breakfast is always beneficial. If there is no impairment of digestion, the menu should consist of a liberal portion of cereal with sugar and cream or milk with any kind of fresh, tender meat, eggs in any form except fried, whole wheat bread, corn bread, corn muffins, graham bread, brown bread, or bran biscuit or muffins with a liberal portion of butter, also about two tablespoonfuls of strained honey, which is a fine laxative. Stewed fruits and a glass of fresh buttermilk may be added.

The noon or midday meal should consist of bouillon or meat broths with filler of rice, tapioca or farina; green vegetables boiled, salads with olive oil, and rhubarb. The latter is especially desirable for its laxative qualities.

Desserts should consist of fruits in considerable quantities, especially fresh fruits; figs, apples, melons, grapes, cherries, raisins, dates, honey, molasses, English walnuts and almonds.

Beverages should be plenty of pure water both at meal times and between and just before retiring, cream, buttermilk, lemonade, weak tea (the latter very sparingly), unfermented grape juice, new cider when obtainable, any of the good laxative or aperient waters.

When a laxative is necessary, my preference is one of the fluid preparations of cascara or a two to five per cent. senna paste to be taken at bedtime and only when absolutely necessary, and then with an explicit injunction that this is to be used only until a regular habit of going to stool at a certain hour daily can be established.

And on this habit I lay the greatest stress, directing the patient to select some convenient hour when other things are the least pressing, but preferably at some early morning hour, and establish a definite time to go to stool daily, never to fail to go just at this time whether he feels an inclination or not. He should go and sit for a few minutes. It is surprising how soon he will acquire a regular habit and can have a free regular bowel movement at this particular time daily and without the aid of laxatives. I endeavor to impress them most strongly that this is the most important part of the treatment, and that discontinuing drugs is the thing to be most desired in relieving constipation.

With the patient's full co-operation and some such method as is here outlined, it is most gratifying to note what can be done toward relieving this obstinate condition in many cases. Of course, when a regular habit is established, all laxative or aperient waters, as well as drugs, should be discontinued and only pure water used.

207 *Wall Building.*

PERFORATING ULCER OF THE LESSER CURVATURE, OBSTRUCTING ULCER AT THE PYLORUS, HYDROPS OF THE GALL BLADDER. REPORT OF CASE.

By J. RUSSELL VERBRYCKE, JR., M. D., F. A. C. P., Washington, D. C.

Miss E. B., aged 45, was seen with Dr. M. H. Price, June 22, 1920.

Family History—Father living. Mother died a few weeks before with cancer of the uterus.

Past History—Always fairly healthy. No serious illness. Just now having menopause.

Present Illness—Started one year ago; has been constant and progressive, being much worse for the last few weeks. Has lost about fifteen pounds in the last month. She complained of severe pain in the splenic region well under the ribs, not definitely affected by food. For several days had vomited continuously. Today the pain shifted to the right costal margin. Nausea, vomiting and pain were marked.

Physical Examination—Very pale, slight, under-nourished woman, weighing about 80 pounds. Tongue dry, thinly coated. Conjunctiva and skin pale with a subitteric tint. Heart sounds were rapid and weak but no murmurs. Pulse 120 and small. Abdomen was slightly distended but recti were extremely tense with almost perforative rigidity. There was intense tenderness over the whole of the left abdomen and well up over the intercostal spaces.

It was recognized that she was a very ill woman, with, however, nothing in the history or physical examination on which to make a diagnosis. She was sent to Sibley Hospital and the next day the test meal showed the stomach filled with changed coffee grounds blood with free HC1 30 and total acidity 62.

Hgb. 65%. R. B. C. 3,840,000, and leucocytes 10,000. Diagnosis was made of gastric ulcer with hemorrhage and peritoneal irritation from near perforation.

She was put on medical treatment for ulcer and responded at once. Vomiting never recurred and pain stopped after the second day. Occult blood disappeared in the early part of second week. She was discharged after the third week.

She remained fairly well for about six months, when she began to have acid stomach, sour belching about one-half hour after meals, which nauseated her and caused her to vomit. She stated that her pain was not as severe as before, but that sharp pains darted up into the chest. She became worse, so that by December 26, 1920, she was miserable with pain, and very weak. She could hardly make the trip to the X-ray laboratory. Dr. Christie reported that there was a barium filled sac in relation to the middle of the lesser curvature due to a perforated ulcer. There was also a deformity directly at the outlet, probably due to an ulcer there. At the end of six hours, there was a large gastric residue and the crater remained filled. Diagnosis was made of perforated ulcer of the lesser curvature and ulcer of the pylorus, producing high grade obstruction. Operation was advised.

I operated at Sibley Hospital the next day, December 17, 1920. At the pylorus was a very large, sclerotic and perhaps healed ulcer with scar tissue nearly completely blocking the opening. The gall bladder was very thin, distended, and filled with stones, with one square stone incarcerated in the mouth of the cystic duct. The gastro-hepatic omentum was hard to recognize as a distinct structure and there was a mass of adhesions and inflammatory tissue over a very large ulcer about the size of a half dollar, well up on the lesser curvature. It was extremely hard and there was a fibrous tongue extending from it, along the lesser curvature, distally, about one and a half inches long and about one-half inch wide. This had all the appearance of being a cancerous arm and the whole condition had a suggestion of malignancy. A loop of bowel was found adherent to the stomach almost as if a gastro-enterostomy had been done. This was easily separated.

It was a puzzling question to decide what to do in the presence of so much pathology. Her condition was so precarious, due to anemia and starvation, that there was some doubt whether she would survive any operation and an attempted partial gastrectomy would have surely proved fatal, so, after consultation with Dr. Reichelderfer, who assisted me and Dr. Price, it was decided to do a preliminary gastro-jejunostomy, high toward the cardia, as the first step to a partial gastrectomy later, if she survived and got stronger. This was done and, while finishing the operation, the stomach filled with fluid which I then thought was hypersecretion of gastric juice, but which turned out to be, at least in part, a hemorrhage from the extensive handling of the large ulcer, as that evening she vomited two pus basins full of dark bloody fluid.

Post-operative treatment consisted in placing her in a semi-recumbent position as soon as she reacted, withholding all nourishment by mouth for three days and feeding by Murphy drip with 10% glucose solution containing soda, continuously from the time she reacted, only stopping it for a couple of hours when necessary. She took it beautifully and only vomited small amounts of bile twice the second day. The convalescence was almost spectacular so that on the third day she looked better than before the operation. Beginning the fourth day, she was started on regular medical treatment for ulcer with modified milk every hour and alkali 15 minutes after each feeding.

January 4, 1921, eighteen days after the first operation, her condition was so good that it was decided to complete the operation. The abdomen was opened through the same incision, which was well healed. There were a good many adhesions to the anterior abdominal wall, resulting from the extensive handling at the first operation. These were separated and the gastro-enterostomy found to be in perfect condition and with no adhesions about it.

Our surprise was unbounded when we saw the change which had taken place. The large ulcer with its covering of inflammatory tissue had disappeared to such an extent that it took some minutes to find it. All hardness had gone and the crater was very small. The fibrous arm along the lesser curvature had completely disappeared. Thus, all thought of its being cancer was eliminated and the ulcer

was so near well that it was thought best simply to infold the remnant. After this was done, the gall bladder was easily removed.

On examination after removal, the gall bladder was found functionless, containing clear mucus, only faintly bile tinged, and twenty-four fairly large stones. The one obstructing the beginning of the cystic duct was impacted in a little diverticulum and had evidently been there many months, as the tissue was molded about it in exact form.

After the second operation she vomited three times, had no gas and practically no pain, made a speedy recovery without any mishaps and was discharged from the hospital on the fourteenth day. She has improved steadily to date and will, I hope, have perfect health. There is, of course, some slight chance that in after months she may develop an hour-glass stomach, because of the extent of the lesion.

This case is reported for: (1) The rarity of three such marked organic lesions in one individual at the same time; (2) the fact that extreme gall bladder disease would have existed without giving any symptoms; (3) because the amount of improvement following gastro-enterostomy was so remarkable, when as a rule the operation is unavailing for ulcer of the lesser curvature. It was done solely to relieve the obstructive ulcer; (4) to illustrate the value of combined medical and surgical treatment in such cases. The medical treatment following the first operatioon was as strict as if operation had not been done; (5) to advocate a two stage operation where cancer is present and the condition of the patient very grave, as in this case.

ACUTE OSTEOMYELITIS.

By JAS. W. GIBBON, M. D., Charlotte, N. C.

"This disease depends for its location and character upon the fact that bone is a rigid and peculiar structure composed of a hard, sparsely vascularized cortex, and a soft highly vascular core or medulla, and a circumferential vascular covering, the periosteum. All bones contain these three structures, though varying in the proportions of each. If one saws through a bone, the outer layers are found compact, while the medulla is found to be composed of an interlacing of thin spikes and spicules having attachment to the cortex. The difference between these two portions is pronounced—the cortex being composed almost entirely of solid matter, while the medulla contains large spaces between the spicules, in which there are fat, marrow cells, thin-walled blood vessels, and a considerable amount of blood. In the long bones—the humerus, the femur and the tibia—there is a definite medullary cavity. In the flat bones it is often difficult to say where the medulla begins or where it ends—the change from the cortex to the medulla being here much more gradual. The medullary cavity contains the true medullary tissue—fat, lymphoid cells, and haemoblastic centers.

On breaking a long bone transversely, one is able to see that even the densest part is pierced by tiny canals, each containing a blood vessel, and the larger ones containing lymphoid tissue. These canals are smallest in diameter directly beneath the periosteum, where they are about 1/1000 of an inch in diameter and, as one progresses toward the medulla, they gradually increase in diameter until at the place where the cortex merges with the medulla they are about 1/200 of an inch in diameter. In the medulla itself, they attain a very much greater size. These are the Haversian canals. Each Haversian canal is surrounded by a series of concentric columns of bone, which columns are divided one from the other by concentric rings of single thread-like processes which communicate from one cell to the other, and with the central tube of the Haversian canal. These are called lacunae, and their thread-like processes, canaliculi. The concentric layers of bone which are really fused into one column and the adjoining columns which are fused together, making a continuous plate, are called lamellae. Between the lamellae and between the concentric groups of lamellae, one finds here and there irregular spaces which are evidently the result of the absorption of hard bone. These spaces are called Haversian spaces.

Hence, it will be seen from this survey of the structure of bone that neither the cortex nor the medulla should be considered a crystallized or an inanimate substance. As a matter of fact, the true nature of bone may be best conceived as a "deposit of organized mineral salt between the spaces of a finely branched system of blood vessels." Lymphatics also probably exist.

The periosteum is a course fibrous membrane which invests the bone, and it also is very vascular. Blood vessels in the periosteum have some muscle tissue in the walls, but the vessels which enter the bone are devoid of muscle, only with the exception of the nutrient artery. The blood supply of the bone comes also from the nutrient artery which generally enters the medulla by a hole running obliquely through the cortex, and in the long bones the artery usually enters near the middle of the shaft. The foramina seen at the ends of bones are for the emission of veins. There are two main nutrient arteries for the femur.

THE COURSE OF BLOOD THROUGH A BONE.

There seem to be at least two well defined views in regard to the actual course of blood through a bone; but, however different these may be, both recognize the same essential factor altering the circulation of the blood as it passes through the bone, namely, that of stasis. Arterial blood enters by two routes. First, and chiefly, by the nutrient artery, which, on reaching the medulla, sends blood both up and down the bone, rapidly dividing into an arborization, the branches of which are short and empty quickly into large venous spaces. The second route is by the periosteal vessels, which arborizing in the periosteum, capillary vessels conduct the blood through the Haversian canals into the medulla. The blood in these capillary vessels is said to become at once venous, the blood issuing from the cut surface of a bone being always venous unless the nutrient artery is cut. For these anatomical reasons blood entering the bony circulatory system loses much of its impulse and becomes static. The entrance of blood into a bone has been compared to the entrance of a stream of water into a tank (Oschner).

Stewart believes that in the ends of the long bones, the areas of greatest growth and consequently the areas of greatest vascularity, the final branches of the nutrient artery arrange themselves in terminal loops, similarly resulting in a retardation and stasis of the current.

INFECTION.

Organisms entering into this system of unique circulation find their best opportunity to rest and be deposited. The point of deposit of the bacteria may be either directly beneath the periosteum, because of the previously mentioned arborization of the vessels in this membrane; or in the medulla at a point where the branches of the nutrient artery enter a blood space; or, according to Dr. Stewart, in the ends of the medullary cavity where the vessels have arranged themselves in terminal loops—in each case, points of blood stagnation.

With the stasis of the blood, the bacteria settle and begin to multiply, undisturbed by the coursing blood current. In this way bacteria, which in small numbers are not virile enough to originate trouble in more active tissues, gradually accumulate and multiply, and finally are enabled to set up an infectious process. From this little focus, toxins and bacteria disseminate, reproducing and extending the process to other areas.

The favorite sites for osteomyelitis correspond then to points of maximum growth, maximum vascularity and maximum stasis, namely, in the shafts of long bones on the diaphyseal side of the epiphyseal cartilage, or at the cortex of the bone, directly beneath the periosteum, infection of the medullary cavity occurring from extension through the Haversian canals.

Infection then is usually haematogenous in origin; the bacteria entering the blood stream from some distant focus, the teeth, the tonsils, or gastro-intestinal tract, are swept away and come to rest in the bone. However, neither the occurrence of acute osteomyelitis nor its pathology is so accurately and aptly defined with such positiveness, for there are other elements of more obscure nature which play an important, though possibly secondary, part in the development of this disease. Reasoning alone from the facts in the circulatory and structural peculiarities of bone, the question might be well raised why all cases of septicaemia and bacteriaemia do not ultimately develop osteomyelitis. Such contention is answered by authors in different ways. Some introduce and emphasize a secondary factor, as a temporary chilling or a trivial trauma to the bone, producing a point of lowered resistance. Others believe it entirely a question of immunity, natural or acquired, of the tissues of the patient to the infecting organism.

Dr. Cotton, of Boston, from his experience adds a few cases in which the osteomyelitis was the result of a local sepsis in the limb lower down, a lymphatic transfer; and also direct invasion of the bone from infection in the contiguous soft parts, most often seen in infections of the hands.

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Bacteria.

Almost any bacterium may be seen in acute osteomyelitis, but by far the most frequent are in order, the staphylococcus aureus, streptococcus, typhoid bacillus, pneumococcus, colon bacillus, and diphtheria bacillus.

Incidence.

Acute osteomyelitis occurs most frequently in the adolescent boy. In a series of 104 cases reviewed at the Copenhagen Hospital, there were three times as many boys as girls affected, and the bones are affected in the following order: femur, 39; tibia, 31; humerus, 9; fibula, 7; radius, 4; and ulna, 3. It is interesting to note that the femur was the most frequently affected, and that it has more nutrient arteries entering into it than any other bone. Long bones are affected more frequently than the flat, though Dr. T. McCrae states that typhoid osteomyelitis is more common in the ribs and costal cartillages. Another interesting feature is the rarity of acute osteomyelitis in the vertebra where tuberculosis is so common. In this connection, Ochsner believes there are many cases of the disease in this region incorrectly diagnosed until spinal meningitis occurs and proves fatal.

Acute osteomyelitis often follows certain of the exanthemata, typhoid, pneumonia, scarlet fever, or a hidden focus somewhere in the body.

Pathology.

Once infection is implanted in the bone, reaction of the parts is usually prompt. If in the medulla, there is first hyperaemia and congestion from vascular distention, later there is a thrombosis of many of the vessels, rapid leucocytic infiltration, and accumulation of fibrin. This is followed by a coagulation necrosis, and a liquefaction of the intercellular substance, destruction of the tissue, and the final production of pus. The periosteum is at first hyperaemic, later edematous, thickened and rubbery over the infected focus in the bone. Suppuration may occur first beneath the periosteum with secondary infection of the medulla by invasion through the Haversian canals. In the medulla there may be two or three foci developed which do not communicate. Inflammation and suppuration compressed within the rigid osseous walls cause great pain and tenderness in the affected area. Because of this inflammatory pressure the violence of the destruction and the rapidity of the process is greatly enhanced. Following the lines of least resistance the pus may burrow through the entire length of the medullary cavity. But what is probably the most frequent, it bores through the Haversian canals, and collects beneath the periosteum, lifting up and separating this membrane from the bone, which may occur over a wide area if the periosteum is not ruptured. When the periosteum ruptures, suppuration spreads through the superficial tissues. These become edematous, the limb greatly swollen, and numerous blisters or blebs containing a dirty yellow serum may be formed over the skin surface.

Abscess in the bone is said to be present twenty-four hours after the onset of the symptoms.

Sequestration.

Destruction then of bone is a large factor in the course of this disease. Blood vessels are thrombosed, the endosteum and periosteum are separated from the bone, and consequently all sources of nourishment taken away, it dies and is separated from the living by the osteoclasts, forming the sequestrum. This process takes place both within and from without the cortex, but the destruction of the delicate medullary bone because of its less compactness is much the more rapid. If undisturbed, the whole shaft of the bone may be destroyed and separated as a sequestrum.

Repair.

If the patient survives long enough the septicaemia, and the process in the bone localizes, ultimately there is bone formation going hand in hand with the bone destruction. This new bone formation takes place from the medulla and the periosteum, forming the involucrum which surrounds the dead bone.

The involucrum formed by the periosteum may be very imperfect and of poor quality, and is frequently honeycombed with holes and spaces from which pus escapes from the neighborhood of the sequestrum. Though there may be only one hole through the involucrum, it may be so riddled as to resemble imperfect lattice work. The new bone formed from the medullary region is more homogeneous and of better quality than the periosteal, and it seems that the chief efforts of the core are directed towards the removal and destruction of the sequestra and bacteria, while the efforts

of the circumferential tissues seem to be directed toward the reproduction of supporting bone. At this stage, though, the pathology of acute osteomyelitis has merged into that of chronic, which is not the purpose of this paper to discuss.

Epiphysitis.

The epiphysis is involved in 12 and 15 per cent. of the cases between the second and seventh day (Ochsner). But as a general rule acute osteomyelitis is limited to the diaphysis, the epiphyseal cartilage acting as a block to the extension of the suppuration into the neighborhood joint. Also, the very close adherence of the periosteum at the epiphyseal line checks the extension of the subperiosteal pus toward the joint. This is in contra-distinction to tuberculosis which begins in the epiphysis and easily involves the joint.

Arthritis.

The joints as a general rule are not involved. However, certain normal anatomical features make exceptions to this rule. The capsule of the hip joint is very commonly attached beyond the epiphyseal cartilage to the diaphysis; hence, part of the diaphysis is within the joint, and involvement of the diaphysis with acute osteomyelitis, is very apt to involve the joint. For this reason, the disease in the upper end of the femur may be more disastrous than at other points.

Joints proximal to the acute infection in the bone do commonly, however, show distention, increased heat and tenderness. This is not due to an involvement of the joint, but due to either a protective or a sympathetic outpouring of lymph from the synovial surfaces into the joint, and hence the fluid in these joints is not infected.

Diagnosis.

Early recognition is the first great essential in any consideration of this disease. By early recognition is meant, not after pus has burrowed through the greater part of the medullary canal, not after it has broken through the shaft of the bone and collected beneath the periosteum, nor after it has perforated this membrane and infiltrated the soft parts, causing a greatly swollen, red, edematous extremity, but within the first twelve to twenty-four hours, even before suppuration has occurred. Naturally, it is in these early cases that this is most difficult, and the diagnosis must resolve itself into one of elimination of the other maladies which may simulate acute osteomyelitis, aided by a very careful examination of the extremity.

The history may be of a trivial injury to the part, or an exposure to cold or wet, a sudden onset with pain in the extremity, a chill, fever 102° or 103°, and great prostration. Of the physical signs at this early period, perhaps the one of greatest weight is an exquisite tenderness localized over the shaft of the bone and as a rule in the neighborhood of a joint. This is gotten by carefully palpating with one or two fingers bit by bit each area of the surface of the bone from one end to the other. At the point where the tenderness is most extreme is where the focus of the infection lies, and not the area to which the pain is referred, for this may be very misleading. Pain sometimes in infection of the upper end of the femur is referred down about the knee, sometimes the pain will be referred to the joint in the region, and again it may be diffuse. The only rule that we can depend on for locating the point of infection in the bone is this absolutely localized and extreme tenderness. This is most frequently in the diaphysis near the epiphyseal cartilage.

The adjacent joint will very commonly be distended with fluid, and also hot, red, tender and painful. This fact may be very confusing and add a good deal of difficulty to the diagnosis in this early stage, but, as remarked by Stewart, the diagnosis "is most frequently not made because of an incomplete and careless examination."

Acute osteomyelitis, especially when there is effusion in and heat and redness about the contiguous joint, must be differentiated from acute rheumatic fever. Rheumatic fever, as a rule, affects several joints, "a single synovitis argues against rheumatic fever" (Oschner), and Sir William Osler remarks that rheumatic fever "is seldom limited to one articulation." The greatest tenderness in osteomyelitis is extra-articular, either above or below the joint, while in rheumatic fever the point of the extreme tenderness is neither above nor below, but in the joint itself. Sometimes the joint contiguous to acute osteomyelitis can be moved painlessly, but this is rare. Tapping over the bone at a point farthest from the joint may cause pain in the bone in acute osteomyelitis.

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while in the acute rheumatic joint such tapping may be painless unless the joint is moved. Medical men further tell us that in the young child the joint symptoms of rheumatic fever may be very mild and not pronounced, but the discovery of an endocarditis suggests the diagnosis. (Osler and McCrae.) Therefore, in distinguishing between these two diseases, examination of the heart may be of some aid in reaching a conclusion. It cannot be denied, however, that, in the early cases when there is a considerable degree of intra- and extra-articular reaction of the joint adjacent to the infection in the bone, the difficulty in diagnosis is largely complicated.

Acute arthritis deformans occurring in young children may be difficult to differentiate from acute osteomyelitis. Commonly the arthritis is multiple, and involves the smaller phalangeal articulations, the prostration is not so sudden, the temperature not so high, and the joints not so tense.

Infantile paralysis in the early stages may resemble acute osteomyelitis. In this differentiation, the rigidity of the neck in the former is a very important point in the determination, and when two limbs are involved osteomyelitis may be ruled out.

Infantile scurvy may be readily recognized, because it affects many bones, the patient has swollen and bleeding gums, and the temperature perhaps is normal.

Tuberculous arthritis or osteomyelitis starts in the epiphysis, the onset is slow, and the constitutional symptoms much less severe.

In some cases of acute arthritis in infants especially with involvement of the hips and knees, there is associated a gonorrheal ophthalmia or vaginitis.

All of these conditions may be excluded by the exact localization of the process outside of the joint. The X-ray is of little or no value in the diagnosis of the early acute stage of osteomyelitis except in a negative way by ruling out other possibilities.

Treatment.

Acute osteomyelitis constitutes a surgical emergency. Drainage of the medullary cavity should be performed as soon after the diagnosis as possible. Any delay or procrastination in carrying out this procedure immediately increases the extent of the destruction and necrosis of the bone, adds to the gravity of the operation, and seriously endangers the life of the patient from pyemia and sepsis. Virulent infection and inflammatory reactions compressed within the rigid walls of the compact bone in the violence of their progress follow the lines of least resistance, and this is usually up the medullary cavity until the cortex is broken through, the periosteum is perforated, and drainage is accomplished by nature. Pus may burrow through the entire medulla, and the greater part of the shaft be destroyed if drainage is not obtained to relieve the inflammatory tension from the inside. Years ago, surgeons advised waiting for the formation of the sequestrum, but no such rule is followed today. There is no other condition which demands more immediate surgical intervention. Operation, then, should follow close upon the diagnosis.

Operation.

An incision is made over the point of maximum tenderness through the skin and soft parts down to the periosteum. In very early cases, the periosteum overlying the involved region is thickened and edematous and not separated from the shaft beneath. If, on the other hand, suppuration has occurred, and a subperiosteal abscess is present, this membrane will be found lifted up and separated from the bone by the pus beneath. In the past, mistakes have been made when pus was found beneath the periosteum because the surgeon incised the periosteum, evacuated the abscess, and did not open the bone.

In considering the pathology and treatment of acute osteomyelitis, Colvin remarks that unless we think of periostitis as really a part of an osteitis we are liable to err in our treatment. Periostitis is not an independent condition and opening the bone is essential. There is nothing difficult or hazardous about opening the bone. Joint complications, necrosis with its long and complex pathology, will be less common if the opening in the bone is extensive enough for adequate drainage. Lejars and LeConte agree that it is never expedient to incise the periosteum only—but that in all cases of periostitis in the adolescent, it is wise to expose the medulla. If no medullary pus is found, little harm has been accomplished, while if a medullary focus has been neglected great harm may follow. Therefore in all cases, when there is or is not pus beneath the peri-

osteum, the medullary cavity should be opened.

If the periosteum is not separated from the bone, this is done with a sharp, thin-bladed chisel, using care and gentleness. Rough treatment is to be avoided, as it is said there is danger of leaving the osteogenetic elements of the periosteum attached to the bone, and the periosteum would thus be incapable of producing new bone. The periosteum then is longitudinally incised and separated from the cortex and with a drill or trephine the medulla is opened. In the very early stages no pus may be found, but the marrow will be inflamed and edematous looking. The focus having been found, a large slab of the cortex is removed, the marrow of the exposed area curetted away, and the walls of the cavity chiseled down until the cavity is reduced to the shape of a saucer or trough. Enough of the cortex should be removed in all directions from the focus to be certain that no secondary focus remains undrained. The cavity may then be swabbed out with 5 per cent. carbolic acid, ether, alcohol (95 per cent.), or iodine, and packed with iodoform or plain gauze, to prevent the accumulation of a blood clot after the patient has reacted. The presence of blood clots is said to lead to continued suppuration. The wound is left wide open and the extremity immobilized. At the end of two or three days, the gauze packing is removed—or sooner if the temperature does not fall on the day following the operation—the wound is washed with salt solution and the dressings changed daily from then until entirely healed.

This applies to the cases in which the diagnosis is made early and are promptly operated upon. In the cases which do not reach the surgeon until late, when pus has largely filled the medullary cavity, or broken through the cortex, bored its way beneath and separated the periosteum from the bone over a wide area and suppuration has spread through the soft parts, the story then is obviously a very different one. The operation must be much more extensive, almost mutilating in its attempt to save the limb, and prevent death from sepsis. In these late cases the medullary cavity must be opened widely, the bone guttered and the marrow removed with the currette as far as the pus extends, even though this necessitates the opening of the entire medulla. It may be necessary to make counter drains through the soft parts, as pus pockets may have formed in these. The wound is then packed with gauze, which is removed in twelve hours. Then Dakin's tubes are placed through the wound, and sterilization by the Carrel-Dakin method begun, and continued until suppuration has been controlled. Joint involvement, loss of a large part or all of the shaft of the bone, destruction of the epiphyseal cartilage, prolonged sepsis, and a delayed and tedious convalescence are the sequels of many of the late cases.

Conclusions.

Bone is a highly specialized tissue. Its vascular plan renders it peculiarly susceptible to pyogenic infection of a great and destructive rapidity.

The infection is commonly in the diaphysis, affecting the epiphysis in only 12 to 15 per cent., rarely invading the joint.

On the early diagnosis rests the most satisfactory form of treatment for this disease. The differential diagnosis can usually be made when careful and complete examinations are made.

Immediate surgical treatment must be followed if great destruction and necrosis of bone, prolonged sepsis, and a delayed and exhaustive convalescence are to be avoided. The treatment is competent drainage of the medullary canal.

Bibliography.

Coplin, Manual of Pathology, p. 846.
Stewart, F. T., Manual of Surgery, p. 308.
MacCallum, A Text Book of Pathology, p. 508.
Cotton, Infections of the Bones and Joints. Surg. Gyn. & Obs., Sept., 1920.
Robert LeConte, Acute Inflammation of Long Bones. Boston M. & S. J., June 1, 1911.
Alfred C. Wood, Acute Osteomyelitis in Children. Penn. M. J., Dec., 1918.
Colvin, A. R., Pathology and Treatment of Osteomyelitis. Minn. Med., Dec., 1918.
Oschner and Crile, Osteomyelitis. Surg. Gyn. & Obs., Sept., 1920.

ACUTE MASTOIDITIS.

By JAMES ERWIN DIEHL, M. D., Norfolk, Va.

I shall not attempt to go into a lengthy detail upon this subject, but will attempt to confine my paper to what I consider essential features encountered in my personal experience and those obtained from reviewing the literature upon this subject.

As my experience increases in mastoid conditions, the less inclined I am to lay too much

stress upon any few signs as an index to the pathological condition present and the influence upon the course of treatment. I think up to recently there has been too much stress laid upon certain symptoms which were thought by older writers to be pathognomonic of mastoid involvement. The older writers upon this subject emphasized the importance of pain over the mastoid bone upon pressure. This is not a reliable criterion in many instances as to the underlying condition, for we all know that cases of a mild or severe inflammatory condition deep seated in the mastoid cells of a thick skull will not give as much pain upon pressure as a superficial mild inflammation in a thin skull. This I have observed upon the operating table.

In certain nervous conditions we often find what is termed physiological tenderness of mastoid process, seen in hysterical and neurasthenic individuals. The symptom of pain has been so impressed upon the medical profession by the earlier writers, that it is sometimes difficult for the otologist to convince the family physician that some of the most serious cases are those in which pain is slight or at times absent. In such cases, the infection is apt to be a virulent one.

Sagging of posterior superior wall of the canal close to the tympanic membrane is diagnostic of destruction of mastoid cells between antrum and meatus. Some operators advise a mastoidectomy when this condition is present, provided that a myringotomy had been done a few days before without any improvement in the clinical findings. The white cell and a differential count in addition to the X-ray would be valuable assistance.

Dr. Dixon, of New York, has done a great deal of work on the mastoid bones. He has been able to compare the two mastoid bones, determine the location of the lateral sinus, character of the mastoid bone, whether pneumatic or infantile; in some cases he has been able to diagnose perisinous abscess and, by repeated examinations, the progress of the disease has been observed, whether resolving and clearing up or advancing as indicated by increasing cloudiness. In conclusion, he says it is not to be understood that the form of infection or a positive X-ray finding alone can be relied upon to any extent as to determining the need of operation. Dr. Dixon has reported 6,000 cases of microscopic smear examinations from the ear, with the following showings: 26 per cent. mixed infection, 25 per cent. streptococcus, 13 per cent. pneumococcus, 7 per cent. staphylococcus, 5 per cent. streptococcus mucosis casapatis, and 30 per cent. bacillus pyocyaneous, diphtheria, tubercule, coli communis bacillus.

It has been my experience that the virulent organism found in the discharge has not given me any more trouble than when I found less virulent organism. I do not believe we can definitely determine the organism that is the prime factor in producing the disease, although we have presumptive evidence when we find but one organism in the discharge, and we are led to believe this particular organism is the cause of the trouble. I have heard otologists of wide experience say that they often were unable to grow the same organism from pus taken from the mastoid cells. I find it best not to lay too much stress upon the organisms found in the discharge, as, mentioned before, the most innocent organisms may cause a very troublesome mastoid and, on the other hand, the most virulent organism may give little trouble.

In a clipping taken from the *Journal of the A. M. A.*, concerning the streptococcus mucosis capsulatis as a cause of mastoid disease, Graham Bacon states that, according to his experience, the streptococcus mucosis capsulatis is the most destructive germ with which the otologist has to contend, and the question of an operation when the mastoid cells are involved is a most important one. He cites a number of cases which serve to empahsize the following points: 1. The patient may have very severe pain, or the pain may be slight, and the temperature is seldom much above normal. 2. The discharge in some cases is very profuse, while in others it is slight, and there may or may not be sagging of posterior and superior canal wall. 3. The X-ray is a most valuable aid, as the cells on the affected side will be cloudy and in some instances it is possible to detect an epidural or perisinous abscess. 4. We should err on the safe side and operate when in doubt, for we often find a great destruction of bone, even in cases that present few symptoms. It is only in a few cases that yield readily to treatment that an operation can be avoided.

Temperature has very little value. In acute cases it usually ranges between 100° and 103°. In chronic middle ear cases with later mastoid

involvement, it is not infrequent to find the temperature normal.

Oedema behind the auricle is more characteristic of circumscribed inflammation of the auditory canal than a mastoid involvement, or it may be due to pus that has perforated the cerebral cortex, thus causing subdural abscess. This latter condition is more frequent in infants and young children.

Conclusions: In order to give the patient the advantage of all scientific medical knowledge, and also as being indispensable to the surgeon, we must rely upon the laboratory and X-ray findings in conjunction with other evidence at hand. Personally, I frankly admit that I do not believe in tinkering with a mastoid after we have all the evidence strongly pointing to a frank mastoiditis. I believe at this stage the surgeon should operate and not wait longer in hope that nature will bring about a cure. We know that, by exenterating the mastoid cells and thereby giving free drainage through the open wound and also by the way of external auditory canal, the condition usually clears up in a few weeks. By following this procedure, we may prevent a long-drawn-out condition, lessen the liability of a chronic middle ear disease, preserve the hearing, and not subject the patient to an infection that may impair his health and lower his resistance, and, after procrastinating for days, weeks, and sometimes longer, have him come to the operating room. On the other hand, it would be interesting to know what would happen to those cases that we operated upon, if left to go unoperated. I personally believe it better to err on the safe side and operate.

337 *Monroe Building.*

HYSTERICAL AMBLYOPIA. — REPORT OF CASE.*

By COURTNEY EDMOND, M. D., Clifton Forge, Va.

Mr. X, aged 41, railway brakeman; married; two children living, healthy; boy twins still-born. Has had measles, influenza and diphtheria, but generally healthy and physically strong. No venereal history; uses tobacco in moderation; drank heavily about fourteen years ago. Six years ago was struck on head with blackjack which rendered him unconscious for five days. To this injury he attributes his present trouble, which he claims must have started about four years ago when he noted the wax ceased forming in his ears and that he has had none since. He was not convinced of visual disturbance, however, until two years later when he had difficulty in shifting his train. Since then he has felt an increasing uneasiness while in the discharge of his duties.

Patient about six feet tall, weighing 170 pounds, muscular type. There is depression in outer table of skull two inches long by half-inch wide, midway between top of left ear and median line posteriorly, where struck with blackjack.

Vision O. D. 20/100; O. S. fingers at 4 feet. Pupils small, round, equal, reacting sluggishly to light; convergence and accommodation normal; muscle balance normal for distance and near; reads plus two print, with right eye only, at 19 cm.; refraction, homatropine, plus one-half-diop-sph., retinoscopy; no nystagmus, but patient states cannot control his eyes, which is evident upon ophthalmoscopic examination.

Fields, from periphery to center, concentrically contracted—tubular vision—left eye represented by circle on ten degree line; right eye less circular and larger extending to 20 degrees templeward. Moving perimeter distant one meter produces no enlargement of field of either eye. Fundus both eyes somewhat cloudy with opacities of vitreous, more marked in left, obscuring disc margins somewhat, otherwise negative.

The dyschromatopsia is interesting. Patient in practical sense is achromatoptic, possessing perception for red only, and this in doubtful manner. Can quite correctly name the primary colors if held 20 cm. from right eye, or at point thirty feet distant. At other distances can perceive only bright red and this color doubtfully. Yellow is called "a dirty white" almost invariably, no matter what the distance, but if blue is brought in contact with the yellow, after deliberation and facial contortions, both are named correctly, although still preferring to call yellow "a dirty white." In like manner, patient will name green if red is brought in approximation, the reply being somewhat in the nature of a guess. From this we get the inference that the antagonistic colors reciprocally assist in the recognition of each. Violet or blue, regarded the same by

*Read at a meeting of the Alleghany County Medical Society.

patient, was first color-perception to disintegrate. As green perception is lost, bright-red retained, and yellow called "a dirty white," possibly meaning its disintegration, one might recall Pitre's arrangement of the order in which colors are lost, namely: "Violet, green, blue, yellow and red."

Patient has monocular diplopia and polyopia. Candle-flame at twenty feet is seen as two flames by right eye (left eye covered), the flame having reddish tinge. Upon being brought nearer, the two flames get closer until at four feet they become one. Curiously, from this point toward the eye, while having the correct tint, the flame becomes smaller, not corresponding to size of retinal image. Cannot see flame at twenty feet with left eye, although with Stevens' phorometer the muscle-balance was obtained, patient seeing the two lights. During these tests he exclaimed that at times he saw two, three or half dozen objects when but one existed. He further stated he could see best between noon and 4 o'clock in afternoon—that early or late he cannot tell a white from a black man 200 feet away, and that at night he is helpless with his lantern. Diminished light sense. Test-card of Snellen is described as "wedge-shaped," bigger at top. The test-object one-centimeter square used in perimetry, if shown and promptly re-shown, is thought of different size, particularly if exhibited at varying distances: Parinaud's Micromegalopsia.

There are visual hallucinations, as railway locomotives and box-cars are seen at times when none exist, and "sink-holes and bumps" are observed in his pathway when there are none, which suggests the psychic or cortical nature of the disturbance.

He claims to have pain in groin which radiates to testicle. States his co-workers have repeatedly stigmatized him as being blind. This he resented until a series of personal accidents convinced him he was no longer suited to the hazards of railway employment. On one occasion, mistaking footing, he fell through a trestle.

There is slight deafness, bone conduction being diminished according to the Schwabach test, more on left side. No cerumen in either canal. Tympanic membranes of normal appearance.

Conjunctiva and cornea anesthetic, both eyes, save possibly centers of latter, patient stating he "blinks," not because he feels but because he sees the test-object, the so-called "retinal-lid-closure reflex." Lachrymal reflex intact.

Prince states that the "Hysterically blind see but their visual sensations are not in connection with their dominating waking consciousness." Surely, this patient's orientation must have been remarkably perfect during his four years' experience as railway brakeman. Parinaud claims that, in these cases, "visual impressions, although unperceived, bring about in the muscular apparatus those instinctive and unconscious movements by means of which we find our way through the external world." Patient voluntarily states that his vision is better while moving about.

His demeanor is worthy of comment. Upon entering the office, he at once seeks recumbent, or semi-recumbent, position, selecting lounge or group of chairs, not hesitating to rest head or to elevate feet upon any adjacent article of furniture. His manner is that of weariness. His gait is uncertain, having curious difficulty in use of right leg and foot, which he awkwardly assists with hands in climbing steps. There is a constant numb or "sleepy" sensation in this leg.

NEUROLOGICAL: Biceps reflex negative; absent right abdominals and right cremasterics; gluteal reflexes unchanged; patellars slightly increased; absent Oppenheim, Gordon and Babinski; no adiadokokinesis; no motor changes in extremities; loss of tactile and thermal sensation in calf of right leg in which cutaneous anesthesia is so often noted in conjunction with tubular fields and insensibility of the conjunctiva and cornea in this neurosis.

LUMBAR PUNCTURE: No increase in pressure; fluid clear; negative cell count and globulin test; negative Wassermann.

White blood cells 11,000; negative blood Wassermann. Urinalysis negative.

Patient first consulted me a year ago. Condition unchanged.

THE IMPORTANCE OF EARLY REGOGNITION AND TREATMENT OF PROSTATIC HYPERTROPHY.

By W. C. STIRLING, JR., M. D., Winston-Salem, N. C.
Urologist, Lawrence Clinic.

The general practitioner comes in contact with all types of disease and ailments, but probably one of the commonest is one he

knows the least about. This condition is prostatic hypertrophy characterized by hyperplasia and median lobe enlargement. We are all familiar, in a general way, with the symptoms of this condition as we are coming in daily contact with these old men seeking relief for their trouble. There is not a village or town in the state which does not furnish its quota of these patients.

When one of these old men comes to us complaining of nocturnal frequency of urination, dribbling, and difficulty in starting his stream, together with other symptoms associated with prostate obstruction, we are too prone to lightly dismiss him without making a careful examination, instructing him to take a urinary antiseptic and regulate his diet. As this does not improve his condition, he makes the rounds of his local physicians, without any marked improvement. Palliative treatment having failed to give him relief, his friends advise him to drink various mineral waters which he faithfully proceeds to do, only to be again disappointed. He soon begins to realize his general condition is becoming worse, by losing sleep, due to the nocturnal frequency, and a gradual increase of residual urine. This brings about secondary changes in the kidneys, due to back pressure. Associated with the urinary symptoms are gastro-intestinal disturbances which derange the digestive apparatus. This condition has a tendency to undermine an already weakened constitution. The residual urine increases in amount until there is very frequently an overflow retention, which keeps the patient's clothes saturated with decomposed urine. This train of symptoms is very prone to cause disturbances of the mind due to the uroseptic state and the patient's condition becomes pitiful indeed. It is a reflection on the general practitioner to permit these old men to pass into a state of uremia or urosepsis without advising surgical interference.

When one of these old men comes in for the relief of their symptoms as described above, a careful history should be taken as this alone will usually reveal the condition. A very thorough examination should then be made, the presence or absence of residual urine determined and, if present, the amount, by having him empty his bladder and then passing a catheter and measuring the amount withdrawn. Also, the presence of infection and extent should be determined if possible. If the amount of residual urine is sixty c.c. or over, we know there is obstruction of the bladder outlet and that further palliative measures are useless. This condition steadily becomes worse, the residual urine gradually increasing, due to the adenomatous growth. Since we can so easily diagnose these symptoms, why do we prescribe palliative measures when we know at best the condition will not improve? Surgical interference alone will benefit these patients, as the prolonged use of a catheter will inevitably lead to infection followed by sepsis and death, no matter how carefully the catheterization is done. These cases are poor surgical risks, and it therefore behooves us as physicians to intelligently advise them in the beginning as to the ultimate outcome and the necessity for early removal of the obstruction before they become uremic.

Since the condition is essentially a surgical one, requiring the services of a trained urologist to handle it, it is the duty of the general practitioner to refer these cases to the urologist, as much so as it is to refer eye conditions to the oculist. General practitioners do not care to assume the responsibility of treating serious eye diseases, yet they do not hesitate to prescribe for and treat prostatic diseases, although the latter probably demand more expert knowledge than the former.

As soon as the diagnosis of prostatic hypertrophy is made, the patient should be referred to a competent urologist for further examination and to ascertain the amount and extent of the enlargement by means of cystoscopy and other methods at his command. The cystoscope enables him to ascertain the size and whether the obstruction is a median lobe or bilateral enlargement as well as the condition of the bladder mucosa. He can also determine the presence of complications such as diverticula or calculi: the amount of residual urine is measured and the damage resulting to the kidneys, therefore, is estimated.

The excretion tests as well as blood retention tests are made together with total urinary output for 24 hours also specific gravity and extent of the bladder infection. All of these tests must be made before a patient can be accurately passed on as a good operative

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risk. The majority of these cases referred to the genito-urinary surgeons are in a state of urosepsis and require a great deal of attention and care, as we would give a baby, in order to put them in condition where they can stand an operation.

The first thing to be done is to give them proper drainage and relieve the back pressure either by systematic catheterization or suprapubic drainage. Care must be taken in relieving an over distended bladder as the sudden withdrawal of a large amount of urine might prove fatal, due to acute congestion of the kidneys with suppression of urine.

The preliminary cystotomy should be done either under local or spinal anesthesia and the patient gotten out of bed at the earliest opportunity. If the drainage tube is properly placed in the fundus of the bladder, there will be no leakage around the catheter and this will give the patient immense relief in preventing the awful tenesmus and difficulty in urinating. This drainage tube can be connected to a bottle at night obviating the necessity of the patient being up from five to twenty times with resulting loss of sleep. It is surprising to see the beneficial results following bladder drainage in these old prostatics. The urgency of urination is relieved as well as the irritability and, as a result, they begin to sleep better, their appetite is improved, and they rapidly gain in weight. The septic condition is gradually thrown off and they pass through the second cycle of the operation in a greatly improved condition. The back pressure on the kidneys being relieved, they begin to swell and become more congested and it is the careful attention and care that helps to tide them over this phase and gradually brings the kidney function to a more normal condition. There has been some tendency in the past to rush the patient through this so-called first stage, but experience has shown the disastrous results in so doing, so that we now allow the drain to remain in the bladder for weeks and even months in some cases, depending on the individual case. These old men are a law unto themselves so no fixed rule can be laid down about when the prostatectomy should be done. They may be permitted to go home and return some months later for operation. Careful instructions should be given the patients as to their care as they must be gradually nursed to health and put in a condition which would permit the operation to be performed. Large amounts of water should be ingested and the daily output should be at least 2500 c.c. It is very essential that the total amount be at least this amount. A moderate amount of exercise should be taken, and they should receive every encouragement as to the ultimate outcome of the second operation.

SUMMARY.

1. The general practitioner should be on the alert for these old prostatics, remembering that the sooner they are drained, thus relieving the back pressure on the kidneys, the more favorable the outlook.

2. Preliminary drainage is very essential either with indwelling catheter or preliminary cystotomy under local anesthesia.

3. Great care must be exercised in relieving a greatly distended bladder. It is imperative that it be done gradually.

FOREIGN BODY IN THE POST-NASAL SPACE. REPORT OF A CASE.*

By E. R. MILLER, M. D., Harrisonburg, Va.

In the April, 1919, number of the VIRGINIA MEDICAL MONTHLY, I noticed an article by Dr. Joseph B. Green, U. S. Naval Hospital, Norfolk, Va., in which he reported a case of a soldier wounded in the battle of Belleau Woods, on June 25th, and operated upon on December 12th, following, for removal of a fragment of shell from the antrum. Dr. Green closes his report of this very interesting case with the remark, "The point of special interest is the fact that such a large fragment of shell could pass through the bony structure of the face and remain in the antrum so long (about six months), without causing symptoms by its presence."

Dr. Green's case leads me to present to you the following case, which I believe will be of some interest to this Society.

On April 21st, 1919, I. J. H., aged 50 years, a farmer, consulted me about a foul smelling discharge from his nose. On inspection I found a large amount of free-bleeding granulation tissue, bathed in pus, and with a probe came in contact with a metallic substance in the post nasal space.

He gave the following history: Four years

*Read before the Valley Medical Association at its semi-annual meeting, Staunton, Va., May, 1921.

previous to his visit to my office, while living in a Western State, he fired an old muzzle-loading gun, which burst when fired. He was rendered unconscious and remained so for more than a week. On regaining consciousness he found a wound on the right side of the face which healed in the usual time but, after a few months, a foul discharge from the nose began, gradually becoming more offensive. I referred the case to Dr. T. C. Firebaugh, of Harrisonburg, Va., for X-ray examination. His report showed a dense opacity in the post nasal space, and pus in the right antrum. On May 1st, under ether anesthesia, I did the Caldwell-Luc operation for abscess of the antrum and found a part of the nasal wall of the antrum destroyed. The antrum was filled with pus. I found the removal of the foreign substance most difficult. I first thought I was dealing with a mass of burnt powder and tried to crush it. Finding crushing impossible, I seized the mass with a strong nasal forcep and, with all the strength at my command, succeeded in dislodging and very slowly delivering through the nostril which, fortunately, was very large. The sacrifice of some mucous membrane was the only damage done to the nose. There was a most profuse hemorrhage following the detachment of the mass, which was controlled by packing. The foul discharge continued for a few days but was very promptly relieved by irrigation with a 1% Dakin solution. A week after the operation I removed with the nasal snare several large pieces of granulation tissue. The patient was discharged in three weeks and inspection six months later found him in perfect health and no discharge whatever from the nose.

The foreign body proved to be the breech-block of the gun. A scar about two inches long, running from just beneath the orbit, parallel with the nose, showed that this large piece of metal had penetrated the bony structures of the face and it remained there for a little more than four years. The foul discharge, headache, and a general feeling of languor were the only symptoms complained of.

You are expected at the Lynchburg meeting. Be sure to attend.

THE USE OF GLUCOSE INTRAVENOUSLY IN CERTAIN POST-OPERATIVE CONDITIONS.*

By A. De T. VALK, M. D., Winston-Salem, N. C.

A reasonable amount of work has been done on the use of glucose intravenously in various medical clinics and its value appreciated, particularly its use in febrile conditions with especial reference to pneumonias.

From its physiological action, there is no question why it should not have a place in the treatment of certain post-operative conditions which have been brought forth by several writers. Not only from the standpoint of promoting diuresis is it useful, but most essentially from the standpoint of combating acidosis.

Crile has advocated the use of glucose along with soda bicarbonate and salt solution per rectum, this having the advantage over simple salt solution in the fact that it contains a substance that actually possesses some food value as well as the alkali effect of the bicarbonate of soda. When tolerated well by the patient, this, no doubt, increases elimination and prevents acidosis to a certain extent.

Farrar, in a recently published article, states that the use of glucose intravenously, given during operation, lessens the acidosis incident to operation. This is quite true, but, in view of the fact that only a very small number of operative cases will manifest symptoms sufficient to warrant more than the ordinary post-operative treatment, there is a question as to whether this should be advocated as a routine measure.

However, there is a certain group of cases in which there is present a definite post-operative acidosis with that distressing feature of persistent nausea and vomiting which is most disconcerting to the patient as well as the surgeon, in which we have been using glucose intravenously with very gratifyng results. These patients are, of course, unable to take fluids by mouth and, as a rule, do not react to proctoclysis with any degree of satisfaction. Acetone is usually present, and at times diacetic acid may be found in the urine of these patients. In fact, the condition is one of a vicious circle in which the primary nausea and vomiting is reflex or toxic, but soon be-

*Read at the annual meeting of the Medical Society of the State of North Carolina at Pinehurst, N. C., April, 1921.

comes the nausea and vomiting of a true acidosis with necessarily a decrease in the urinary elimination that practically always shows a moderate trace of albumin and casts.

It is this type of case in which we advocate the use of glucose intravenously, and it is really surprising to note the marked improvement in such cases after its use. The reaction that follows the administration of glucose intravenously is mild or no general reaction may be noted. However, as a rule, shortly after giving this into the vein, there is a moderate amount of sweating and the skin feels moist over the entire body. This may reach a profuse sweat. Along with this there is generally noted a fall in temperature, if this is elevated, probably due to the elimination through the skin as well as the urinary system, and the patient will state that he or she feels better. The drop in temperature is not immediate, though usually manifests itself within a few hours. The pulse usually shows a moderate drop in rate, though this may be slightly accelerated initially. The blood pressure is not materially influenced by glucose, although there is usually an immediate drop of about 10 mil. of mercury.

Greatest of all is the marked improvement in the urinary output, which generally takes place rather quickly, within three to four hours, and may last over a period of twenty-four hours. If previous to the administration of glucose the urine showed acetone or diacetic acid, this will be found to be greatly diminished and rapidly disappear. The same is true as to the presence of albumin which will be found to be diminished—probably due to the dilution of the urine as there is a definite increase in quantity.

The marked improvement in the general appearance of the patient is quite evident and nausea and vomiting, in most instances, clears up surprisingly.

One typical case might be mentioned—that of a patient on whom a Cæsarean section had been done for toxæmia of pregnancy. For twenty-four hours immediately following operation, this patient voided only five or six ounces of urine containing acetone, a large amount of albumin, which, of course, had been present previous to operation, and an enormous number of casts. Four hundred c.c. of glucose solution was given intravenously, and for the following twenty-four hours the output was between 60-70 ounces of urine, showing a very decided improvement as to albumin and casts. At the end of this time only a slight trace of acetone could be found. There was a moderate drop in temperature—about 2 degrees—but this did not hold over four or five hours. The pulse, however, dropped in proportion to the temperature and remained so. This patient had received Crile's solution per rectum during the first twenty-four hours following operation, though she had taken little water by mouth owing to marked nausea and vomiting. This cleared up quite rapidly following the administration of glucose.

Cases of infection, in which there is necessarily an elevation of temperature other than the usual slight post-operative rise seen in most instances, show a definite drop of from one to two degrees, but this may not hold for more than a few hours when the former level is again reached. There is, however, most frequently a permanent drop in pulse rate.

The fact that glucose possesses a high food value that is easily and readily assimilable it can play an important role in the prevention of protein catabolism of the body tissues. This being the fact, it can be seen that it has a rather broad field of usefulness, especially in febrile conditions. Just here might be mentioned the use of glucose in pernicious vomiting of early pregnancy in which there is present the starvation acidosis with large quantities of acetone in a scanty urine. Excellent results have been obtained in a limited number of cases.

A careful study of the urine should be made in all cases, that an incipient diabetis is not present, although studies in the sugar content of the blood immediately after injection of 250 c.c. of 10 per cent. solution of glucose show from .08 to .1 per cent. blood sugar above the normal limit, which in the normal individual is almost a negligible consideration. Further, these higher figures rapidly return to normal after the lapse of a few hours.

From a physiological standpoint, the injected glucose passes rapidly from the blood stream to the tissues and there is utilized at the same rate of injection, provided this does not exceed 0.8 gm. per Kg. of body weight per hour. If this rate is exceeded, glycosuria develops.

We are convinced that the intravenous route possesses the advantage over other methods

in that it is practically painless, is very simply done, and, most important, owes its diuretic properties to this method.

If given subcutaneously or per rectum, it has first to pass the living membrane and, in so doing, assumes a colloid form and, like other colloids, diminishes diuresis. On the other hand, if put directly into the blood stream, it circulates as a crystalloid and, like other crystalloids, is a diuretic, due to its power to absorb water from the tissues.

As to the method of preparation and administration, we have found that a 10-20 per cent. solution, made with freshly distilled water, titrated and neutralized with sodium carbonate, filtered and autoclaved on three successive days, is most satisfactory. It is first put into 250 c.c. (8 oz.) bottles, as they are easily obtained and inexpensive.

A small needle, 20 c.c. Luer syringe and a three-way stopcock is all the apparatus necessary, the original bottle acting as a reservoir. The solution should, of course, be given at body temperature. An electrical pump has been devised by which the rate may be accurately sustained, but this is an expensive instrument and hardly has a place in the ordinarily equipped hospital.

The use of this solution intravenously is simply suggested as an adjunct to the general post-operative treatment, but in such cases where one contemplates its use, do not wait until there is an overwhelming acidosis present before doing so.

From 250 to 500 c.c. can be given with safety as often as every six to twelve hours, according to the general consideration of the patient. From the known physiological action of glucose given intravenously, it seems very reasonable to advocate the feeding of a high carbohydrate diet to patient previous to operation as well as the use of bicarbonate of soda during this time. Purgation of patients just before operation causes the loss of much body fluid and in itself predisposes to acidosis, as mentioned by Farrar.

In debilitated individuals, or such cases where one anticipates a lengthy operation with prolonged anaesthesia, loss of body fluid, etc., the administration of glucose intravenously immediately or during operation no doubt plays a large part in preventing subsequent acidosis.

THE CONSERVATIVE TREATMENT OF ECLAMPSIA.*

By J. A. LIPNICK, M. D., Norfolk, Va.

The purpose of this paper is to call attention to the new treatment of eclampsia, as it is now being viewed by students of this subject. With the advance of surgery, Cesarean section and other surgical procedures became very popular. However, recently, men, who previously advocated surgical procedures, are now bending toward conservative treatment for reasons which I hope to point out briefly in this talk.

I will, therefore, review in a few words the etiology, pathology and diagnosis before proceeding with the treatment.

DEFINITION:—Eclampsia has been defined as convulsions of the entire body with loss of consciousness, occurring in pregnancy, labor or postpartum.

ETIOLOGY:—In spite of the many investigations and researches on this important and serious malady, the cause of eclampsia has not been determined.

There are two distinct theories which are now being considered in the etiology of the disease. The Rotunda school, with Smellie as its exponent, teaches that the toxin is elaborated from the food taken; that is to say, due to some error in the metabolism. The other school considers it due to placental albumin finding its way back in the maternal blood in such large quantities, that the antibodies elaborated cannot take care of the toxins and, as a result, we have the convulsive attacks.

This has a very important bearing on the treatment pursued by the various schools. The first school teaches little or no interference with labor, while those of the second view advise radical procedures, such as induction of labor by vaginal or abdominal section, etc.

DIAGNOSIS:—This is usually not difficult It frequently, however, has to be differentiated from epilepsy, hysteria, uremias, strychnine and phosphorus poisoning, but careful history and examination and the constant presence of albumin in the urine, make the diagnosis comparatively easy.

PATHOLOGY:—For many years we have been

*Read before the Norfolk County Medical Society, March 28, 1921.

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under the impression that the pathological lesion of eclampsia is in the kidneys. It is true that the disease is usually accompanied by a large amount of albumin in the urine, but the fact remains that very few women with chronic nephritis develop eclampsia during their pregnancies.

Later researches also showed that the main lesion is in the liver, where on autopsy we find small hemorrhages throughout this organ. This was confirmed by Schmorl who performed autopsies on 17 women who died from eclampsia. This observer also demonstrated areas of necrosis and fatty degeneration of the liver tissue. We are, therefore, justified in attributing the pathology of this disease to the liver rather than the kidneys.

Treatment (*Prophylactic*):—In spite of its unknown etiology, it is admitted by all authorities that careful prenatal treatment will eliminate a great number of these cases. This consists chiefly in careful observation of all pregnant women who present themselves for advice and treatment. Blood pressure should be taken frequently and, if it reaches above 150 mmg. (systolic), steps should be taken to lower same. Urine should be examined about every two weeks during the last three months of pregnancy. Should the high blood pressure persist and the urine show constant presence of albumin and casts, patient should be kept on a strict milk diet, till marked improvement is in evidence.

Proper diet and clothing, normal habits, and the general rules of personal hygiene should be observed. Tight lacing of corsets should be prohibited. Constipation should be avoided by the administration of cathartics and enemeta. Sweating should be encouraged by hot baths, etc.

As stated above, however, the object of this paper is to call attention to the cases in which prophylactic treatment did not bring about the desired results, or cases which are seen when in convulsions and in grave toxemic stage.

I was very much impressed with the treatment that is instituted in the New York Lying-In Hospital where it meets with great success. At first one thinks that it is daring and dangerous practice to allow a woman in convulsions to deliver herself and not to proceed with the emptying of the uterus, such as we have always been taught. However, seeing the remarkable results obtained from their very strict and correct records, and having had the privilege of personally observing six cases during my recent stay at the hospital, I believe that I would now have more courage to follow this procedure in private practice.

The procedure is comparatively easy, when one can obtain competent nursing, and is as follows:—As soon as the patient is seen with convulsions and the diagnosis of eclampsia is made, the blood pressure should be taken and a catheterized specimen of urine should be examined for albumin and casts. She is then placed in a quiet, darkened room, in charge of a competent nurse or attendant, and ½ grain of morphine sulphate given hypodermically. Her stomach is then washed out and 2 ounces of castor oil poured in the tube and allowed to remain in the stomach. We then begin colonic irrigations with a five per cent. glucose solution in water.

If the blood pressure is over 175 mmg. (systolic), the woman should be bled till it is lowered to at least 150 mmg. Bleeding, however, is not advisable unless the patient is of the plethoric type, and is contra-indicated in the anemic woman, as a large amount of blood may be lost during the delivery, and we will have to contend with shock.

Within an hour of the initial dose, another ¼ grain of morphine is administered and repeated every hour till the convulsions have ceased completely and the respirations slow down to 8 per minute.

All the cases that came under my observation were delivered normally, except one in which low forceps were applied on account of a slightly contracted pelvis. In general, operative procedures were instituted in cases where it would have done in abscence of eclampsia, such as Cesarean section in contracted pelvis, etc.

There is another reason why this treatment should appeal to the conservative surgeon.

Reviewing the literature to some extent, I find that the best obstetricians in this country and abroad state that with the radical treatment such as "bagging" accouchement forcé, vaginal and Cesarean section, the maternal mortality averages from twenty-five to thirty per cent., and a fetal mortality from forty to fifty per cent. This is a frightful

mortality for a disease which we all meet in practice.

On the other hand, Craigin (*Amer. Journal of Obst.*), reports that of all the cases treated in the Sloan Maternity Hospital by the conservative method, the maternal mortality was reduced to fourteen and five-tenths per cent. with a corresponding decrease in still births.

McPherson, of the New York Lying-In Hospital, reports a series of 67 cases with a maternal mortality of seven mothers, that is ten and four-tenths per cent., and twenty-eight and five-tenths per cent. of still born children. In a personal communication, this author reiterates his enthusiasm of this treatment, though previously he has been an advocate of radical procedures.

In passing, permit me to say a few words about morphine which is a very important factor in this treatment. We have always been told that this drug is a severe depressant in large doses, and that it checks all secretions of the glandular system. On the other hand, Rovier used large doses in 29 consecutive cases with no untoward effects.

The U. S. P. states that morphine checks all secretions of the glandular system, *with the exception of the kidneys and the skin, which it rather increases.* We, therefore, should not be so reluctant in employing this drug in large doses in such an emergency, providing it is done under the careful supervision of the attending physician.

To Summarize:—I would like to say that it is my belief that, owing to the fact that the radical treatment of eclampsia gives such a high maternal mortality and a still greater percentage of still births, the conservative medical treatment should be tried, unless there is an anatomical abnormality of the pelvis of the eclamptic women, necessitating surgical interference.

420 *East Freemason Street.*

The U. S. Civil Service Commission,

Washington, D. C., announces an open competitive examination for trained nurse and trained nurse (psychiatric), on December 7, 1921. This examination is open to both men and women. If interested, write at once to above named Commission for information.

LEST WE FORGET.

Memorial to the Late Joseph Price.*

By J. W. KENNEDY, M. D., F. A. C. S., Philadelphia, Pa.

The lives of great men usually record themselves, and yet I know of no man who did so much original great good for the medical profession which is so little recorded in tangible medical literature, as did the late Joseph Price. It is questionable if any man in the profession was so widely known as he, except those who were either conspicuous teachers in medical schools or those who had written themselves into fame by publication of standard medical works. Dr. Price had done neither. He forcibly stands out as the most unique character in American medicine. I use the term medicine in its broadest sense, not distinguishing between medicine and surgery, and I do this to more forcibly bring out the strong character of this man as a physician. One who was always first a physician and only next a specialist. Before I take up his remarkable character as surgeon, let me say a word about him as man and citizen.

He was a man of tremendous force; he knew no fear. His enthusiasm was unbounded; it was the greatest inspiration to those who knew him. He was the most devoid of diplomacy of any man of my acquaintance. He had built a Chinese wall around himself that force and opposition could not penetrate, and yet he was the most accessible man by any in need of charity or helpful word. You cannot analyze his life's qualities without depicting one of the most strong, helpful and interesting characters in American life. This will become apparent as I review the great things of interest in his life. His lack of diplomacy and strong convictions in what he thought was right are well illustrated in a conversation I had with a coal dealer who presented the doctor a bill for over a thousand dollars for coal delivered to his hospital. There was a discrepancy of fifty cents between the dealer's and Dr. Price's estimate of the account. The Doctor stood for his figures and the dealer, to avoid further disagreement, settled at Dr. Price's estimate. The coal dealer relates that Dr. Price sent him next day a

*As Dr. Price was a native of Virginia and one of whom this State was justly proud, we publish this memoriam by Dr. Kennedy, after twelve years as associate and assistant of Dr. Price.

thorough-bred calf, paying express and all expenses amounting to over one hundred dollars.

He was the most approachable man among the conspicuous in his profession and yet had the reputation of being surrounded by armor plate. He was most alert and his active brain worked in all surroundings. A foreman on the Doctor's farm relates an incident which is so typical of Dr. Price's alertness. There were twenty Italians attempting to move a building on the Doctor's farm; they had fastened a rope to the building and were pulling it over some rollers. The Doctor came on the scene, took hold of the rope and began to pull; suddenly the rope broke and every man went back on his haunches excepting one Italian. The Doctor was the first on his feet and said to the Italian who did not fall: "Get off of my farm, you contemptible loafer; if you had been pulling you would have gone down, too," and he did discharge this man.

He was the keenest observer of men who attended his clinic, and had no use for a physician who did not keep his hands and linen clean. He often said to me in regard to visitors who attended his clinics, "Never take a physician through the hospital who does not think enough of himself or his profession to keep himself clean; he will kill some one," and he meant it.

He was extremely fond of the young physician; it never was too much trouble for him to show the beginner any courtesy in his power. He never was an actor. He never courted the nobility of his profession. I never saw him do a spectacular thing in my life. He had no use for the man who operated by the clock. He was the most bitter enemy the profession ever had to advertising in any particular.

Professional graft was as far from his make-up as fashion is from reason. Although a man of no means, he conducted throughout his life the largest private surgical charity in this country.

Although physically a powerful man, he was most gentle in his examinations, and his tenderness to the suffering was one of his greatest charms to me. He never was in too much hurry to stop and turn the colored patient, straighten her gown, smooth the wrinkles from the sheet, and yet he was the greatest surgical gladiator the profession has ever seen—a man seemingly full of contradictory qualities but ever sturdy in his purpose of helpfulness.

He was a great lover of outdoor life, his farm was a small menagerie. He was a most interesting companion in a horseback ride over his farm, constantly talked of higher education, and had no patience whatever with fad or fashion. He constantly joked with his assistants, but protected them in all hazards of professional work. He often said to me, in my early apprenticeship when he thought a patient had small chance of recovery, "You had better say I did that operation." He was as big as a mountain when it came to carrying surgical responsibility.

He had no patience with professional politics. Never courted any society to be its president. He was strongly opposed to any young physician accepting a salary, stating that it often ended a useful life. He was most bitter against commercializing the profession, and said no physician should sell himself to any company; that the physician should be compensated for the work he did, regulating his own charge.

He predicted fifteen years ago just what the profession is facing today. The corporations and State are taking the soul out of medicine and with it will go progress. I have known him to go to court to fight for an enemy, but I question if he ever forgave any one for an insult. He was an unrelenting and bitter fighter if the fight was on.

Is it not the saddest thing in life that so often some small eccentricity, which is often found in a great man's life, is so often exaggerated until it partially obscures the splendor of a great man's soul? Small men just will not permit any man to be great.

Dr. Price's life as surgeon and teacher was brilliant beyond description. He came into the surgical arena at the dawn of both abdominal and aseptic surgery, and with his usual force and sagacity drove his specialty far beyond its natural pace. He was a pioneer of unprecedented force in abdominal surgery. He was often cautioned by his elders not to go too fast, that much was then uncertain and serious mistakes could be easily made. In spite of his early work where many of the serious surgical problems had not yet been worked out, it can be said of him that no man living or dead so early modernized himself, and to this hour no man has so little to apolo-

gize for in his great scope of surgical judgment. During my twelve years' association, I never heard him make a surgical prediction but that it has come true. I never knew him to take up a certain procedure which did not live, and I have heard him condemn many popular surgical procedures of which I have lived to hear their death knell. His early wisdom in surgical judgment is the most consummate of my knowledge, and much he taught over thirty-five years ago is more modern than the present teaching. Few men indeed have had that combination of surgical skill to be brilliant plastic (perineal and cervical repair) and abdominal operator. He has often been referred to as an operator of the combined qualities of an Emmet and a Tait. Certainly the living will permit me to say, it is questionable if any operator living or dead was so the master of difficult abdominal surgery. His ability to deal with big adherent tumors, difficult enucleations of tubal and ovarian infections, peritonitis and pus forming lesions in general, was most masterful. Did he have an equal? There is scarcely a prominent operator in America but who has often referred to Price's masterful ability in different lines. Those who ever saw him break the universal adhesions in a plastic variety of tubercular peritonitis saw the most classical demonstration of manipulative skill possible in surgery.

It was this ability to deal with adhesions which permitted him to meet the indications in the urgent abdominal conditions as no one of my acquaintance could, and it is the absence of this quality in the popular surgical profession of this hour which has taken from us thirty-five years of progress in the most urgent abdominal conditions. Dr. Price's great vision was first demonstrated at the dawn of abdominal surgery in the slums of Philadelphia. Operating on an ironing board in the midst of filth and squalor, he did one hundred operations for pyosalpinx with a single death. Is it any better today in the modern hospitals?

These same principles which he acquired in surroundings of most adverse circumstances were carried throughout his life. From necessity, slum work made him boil out all unnecessary paraphernalia and reduce his surgical technique to necessities' naked means. He thus became a great master of possibly the most simple technique of any operator. We can sometimes look backward and modernize our lives.

Dr. Price was one of the very earliest advocates in this country of aseptic surgery as opposed to antiseptic surgery. His work in obstretrics in the Preston Retreat and the Philadelphia Dispensary was a most eloquent appeal for the aseptic conduct of this work; and if his career had stopped with his teaching in obstetrics, he would even then have done his profession a great service.

So far as I know, there is no procedure in surgery nor an instrument which bears his name, and yet he was the most original operator of my acquaintance; but this is as he would have it. I know many surgical procedures which were unique with Dr. Price and many could easily bear his name. I remember hearing him rebuke an instrument salesman who tried to sell him an instrument which he called "the Price" so-and-so.

He had no use for the squabbles of the profession over priorities. I once said to him: "Mr. Lane's link is your elbow." He said: "Mr. Lane has beautifully written it up and is entitled to any claim he may make." Some years before Mr. Lane brought out his Lane's link, we assistants had called the same condition the "Price elbow," as Dr. Price in demonstrating the condition was in the habit of exhibiting his elbow with arm flexed and then, after incising the fibres which produced the link, he would straighten out his elbow and say: "You see, I take the elbow out of the bowel just as I do when I straighten my arm." He would then finish his discussion by saying, "You must always examine the last few inches of the ileum; it is prone to be fixed in the pelvis." Truly, great men care little who does a thing just so it is done.

His vaginal hysterectomy was unique and classical in his hands. I have assisted him in doing hundreds in five minutes and many in two and three.

His appendectomy as a stumpless operation is unique and the most thorough procedure I know. I could go on for pages with procedures which might bear his name and have a more legitimate patent right than numerous procedures I know which do take the name of those who are willing to have surgical namesakes.

I am in possession of a letter from Dr.

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Thomas Addis Emmet, written on his eighty-fourth birthday to Dr. Price, in which Dr. Emmet says: "You (Dr. Price) are the only operator who was ever able to do my operation from a single demonstration and have done more to establish its teaching than I." Dr. Price loved to demonstrate repair work of the cervix and perineum, and thousands who saw him work will say he had no peer. His hand work with small straight needle and fine silk in all lesions of the intestines was so full of grace and dexterity that one would marvel how such skill came from such clumsy looking hands. He was strongest in his clinical teaching; his operative demonstrations with his most simple technique were forceful beyond description. It can be said without fear of unfair comparison that his clinic in his private hospital was the most unique, as no Trendelenburg position was ever used, no absorbable ligatures used, retractors never used, terraced method of sutures not used, rubber gloves not used, which is certainly enough difference from popular teaching to place his clinic in a class by itself; such teaching has remained to this day in the Joseph Price Hospital.

His diagnostic ability in abdominal lesions was almost a gift or a blessing. During my twelve years' association, I never saw him make the second incision on account of error in diagnosis and never saw him introduce the entire hand into the abdominal cavity for diagnostic purpose. It was remarkable how much he could do in a very small incision. He was beginning to bitterly condemn the big exploratory incisions which were becoming popular before his death, as he recognized the same meant feebleness in diagnostic ability.

Dr. Murphy refers in literature to Dr. Price's consummate skill in difficult surgical enucleations of pelvic conditions and says: "He has taught more in peritonitis and pus forming lesions of the abdominal cavity than all of us."

Dr. Howard Kelly said: "Price was the most forceful teacher of his age."

Dr. Deaver has said: "No one could handle peritonitis and intra-abdominal pus as Price."

Dr. W. J. Mayo has said in literature: "The three men to whom the world is most indebted in abdominal surgery were Price of America, Pean of France, and Tait of England."

Dr. Louis McMurtry has said: "There are few surgeons in America who do not in some way show the handwork of Joseph Price."

There is no end to like comments from veterans in the surgical arena, and yet Philadelphia permits him to remain humbly dead.

One of the greatest services to his country was his constant interest in the local hospital. He dedicated more such institutions than any man in America and held clinics in nearly every State of the Union.

He was the one operator who said: "There must be a local surgeon; don't bring your patient to me; urgent abdominal lesions must not be shipped."

He told the local men to go to work, encouraged them to visit teaching institutions, was ever anxious to help and show them. He showed a deep, sincere and unselfish interest in these local hospitals, and the distance was never too great for him to go to aid and popularize this work. He was in this work the greatest philanthropist of my acquaintance. He had a deep interest in the army and navy physician and early advocated an educational institution at Washington like the one that has been established.

His great scope of surgical judgment permitted Dr. Price early in his life not only to say much of the early surgical pathology of many subjects, but he early modernized these subjects. He took up the surgical pathology of tubal and ovarian infection and extra-uterine pregnancy, where Mr. Tait left off and said the very last words in these subjects.

Review, if you please, the earliest discussions on appendicitis and, if you like, acute abdominal lesions and you will find Price forging way ahead of his seniors and advocating early uniform removal of the appendix when other prominent operators were only advocating the operation of necessity after the abscess had formed. He said the last word in appendicitis, and he and Dr. Emmet in cervical and perineal repair. Any failure in their teachings comes from a misunderstanding or a failure to do their work as they did it. I find this too often so.

In his teaching he was most eloquent and forceful in bringing out the clinical picture of the diagnosis and depended less on the laboratory than probably any important teacher in this country. I received many rebukes from him because I had failed to bring out the clini-

cal valuable points in making a diagnosis. He, Murphy and Rovsing were much alike in this respect.

Dr. Price was not logical in his discussions or writing, and for this reason will receive less credit in the future of his profession than any strong man in it. I believe you cannot more compliment a man than to say of him, he cared more for a thimble full of love from a deserving public than a hogshead of admiration from a distinguished few. This was Dr. Price. His life records his wish. He forcibly lived; he is humbly dead. As my teacher and master, I loved his force, I revered his gentleness to the suffering, and rejoice that he permitted me to serve him.

241 *North Eighteenth Street.*

GUN SHOT WOUND.

By R. H. PRETLOW, M. D., Suffolk, Va.

The patient, a colored woman, aged 25 years, in good physical condition, was wounded with a .12-gauge shotgun at short range. The charge entered the right buttock from the left, just missed the anus and made an opening of entrance about the size of a silver quarter of a dollar. When it reached the gluteus maximus muscle, the expansion of the charge acted as if it actually had been placed there and set off. It tore a cavity or crater about six inches in diameter and to the depth of half through the gluteus maximus. A narrow isthmus of skin with underlying subcutaneous tissue remained from the opening of entrance to the crater—a tunnel for a distance of about two inches.

The patient was taken immediately under treatment. The wound was cleaned and drained. Patient was inoculated with 5,000 units of tetanus antitoxin.

The burn and destructive process had entered so deeply into the tissues that there separated a membrane-like slough to the thickness of an orange peel and almost a complete cast of the tunnel and crater. Granulation proceeded rapidly to complete recovery.

As we are admonished by the pioneer de Vigo, "They are contused and burned, also poisoned by the powder, hence are hard to cure."

IN WRITING ADVERTISERS, PLEASE MENTION THIS JOURNAL.

Proceedings of Societies

Walter Reed Medical Society of Virginia.

Last May, forty-six physicians from counties in the eastern section of Virginia, met at Gloucester C. H., Va., the birthplace of Dr. Walter Reed, to consider the advisability of doing something worth while as a memorial to him for the great service he rendered mankind. After mature deliberation, it was decided to organize a strong medical society as a most fitting tribute to his memory and that this society would meet at least twice a year and endeavor to be an A-1 Society. The following officers were elected President, Dr. H. A. Tabb, Gloucester; vice-presidents, Drs. J. W. D. Haynes, Mathews; Brown Evans, Saluda; H. D. Howe, Hampton; Rea Parker, Smithfield, and W. W. Kerns, Bloxom; secretary-treasurer, Dr. L. E. Stubbs, Newport News.

The autumn meeting was held in Newport News, September 14 and 15, with an attendance of more than 100 and the meeting was a tremendous success in every way. The papers were of a high order and the social features were exceedingly pleasant. The annual meeting will be held at Saluda, in April or May, 1922.

The Valley Medical Association

Held its regular semi-annual meeting in Winchester, September 29, under the presidency of Dr. M. J. Payne, of Staunton. A number of new members were admitted, making the membership of this society more than a hundred. A number of interesting papers were read and discussed and Drs. P. W. Boyd, Winchester; D. M. Kipps, Front Royal, and R. S. Griffith, Basic, were elected delegates to the Lynchburg meeting of the Medical Society of Virginia.

It was decided to hold the next meeting in Harrisonburg, on the last Thursday in May, 1922, and the following officers were elected: President, Dr. C. E. Conrad, Harrisonburg; vice-presidents, Drs. Hunter McGuire, Winchester, and Harry Wallace, Greenville; secretary, Dr. A. F. Robertson, Staunton; and treasurer, Dr. J. M. Biedler, Harrisonburg. The executive committee is composed of Drs. W. L. Hudson, Luray; R. C. Randolph, Boyce; P. W. Boyd, Winchester; Reid White, Lexington; D. M. Kipps, Front Royal; W. C.

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Ford, Woodstock; Geo. V. Wood, Jr., Harrisonburg, and M. J. Payne, Staunton. A committee on Social Hygiene was appointed, the members of which are Drs. J. S. DeJarnette, Staunton; J. H. Deyerle, Harrisonburg, and P. W. Boyd, Winchester.

The Southside Virginia Medical Association

Held its regular quarterly meeting in Victoria, September 13, the president, Dr. E. L. Kendig, presiding. There was a large attendance and a full program, consisting of many good papers, was rendered during the afternoon session. Dr. J. Shelton Horsley, Richmond, gave an illustrated address to the association and public at the night session, on the subject, of "Some Modern Views on the Nature and Treatment of Cancer." An unusually large crowd was present. Dr. W. D. Kendig, Kenbridge, was elected delegate to the Lynchburg meeting.

Not the least enjoyable feature of the meeting was the splendid supper tendered the Association at 7 P. M., by Dr. E. L. Kendig, on the lawn of Kendig Bros. Hospital. The next meeting is to be held in Petersburg, December 13, at which time will be held the annual election of officers.

R. L. Raiford, *Secretary.*

The American Roentgen Ray Society

Held its twenty-second annual meeting in Washington, D. C., September 27-30, under the presidency of Dr. Arthur C. Christie, of Washington. The exhibits were excellent and the program was most elaborate. There was much discussion of the new high voltage X-ray treatment for deep malignant disease. Among the attractions of the meeting may be mentioned the Caldwell Lecture, by Dr. Rene Ledoux-Lebard, of Paris, his subject being "Progress of Deep Ronetgen Therapy." Dr. Ledoux-Lebard, although a Frenchman, read this in the purest English. The Caldwell Lecture was established at last year's meeting in honor of the memory of Dr. Eugene W. Caldwell, of New York City, who died in 1918, a martyr to X-ray work.

As a memorial to Dr. Charles Lester Leonard, of Philadelphia, whose death was also a result of X-ray burns, a $1,000 prize has been offered each year for the best original investigation along X-ray linees. The first prize was awarded this year to Dr. A. J. Pacini, of the X-ray and Laboratory Section of the U. S. Public Health Service. The subject of his investigations was "The Anthropometric Development of the Skull." Among the prominent invited guests from abroad who were listed for papers were Drs. Reginald Morton, of London; Prof. Dr. P. A. Lilienfeld, of Leipsic; Prof. Dr. Friedrich Bessauer, and Dr. Hans Holfelder, both of the latter of the University of Frankfurt.

Probably the most notable feature of the meeting was the banquet which was given in honor of the twentieth anniversary of the work of Dr. Fredk. H. Baetjer, of Johns Hopkins, as a roentgenologist. On this occasion speeches were made by Drs. W. S. Thayer and J. M. T. Finney, of Johns Hopkins University, Baltimore, by Dr. Ledoux-Lebard, of Paris, and Dr. Pierce, of London, England. A volume containing about 200 letters from Dr. Baetjer's friends and admirers all over the world was presented him as an anniversary present.

Dr. W. H. Stewart, of New York City, was elected president, and Dr. Hollis E. Potter, of Chicago, secretary. The next meeting is to be held on the Pacific coast, possibly at Los Angeles, the time and place to be determined later.

The Loudoun County Medical Society

Held its regular meeting September 8, in Leesburg, decided interest being manifested in its proceedings. It was decided hereafter to hold its meetings on the first Wednesday of each month rather than four times a year as in the past.

Dr. G. F. Simpson, Hamilton, was elected president, and Dr. Samuel L. Steer, Waterford, secretary.

Dr. J. W. Marshall, Leesburg, and Dr. L. T. Rusmiselle, Waterford, were elected delegate and alternate, respectively, to the State Society, and, after due discussion, were instructed in favor of the location of the Medical Department of the University of Virginia at Richmond.

Samuel L. Steer, *Secretary.*

The Roanoke Academy of Medicine,

At the first regular fall meeting, October 3, 1921, elected the following officers for the ensuing year: President, Dr. T. Allen Kirk; vice-presidents, Drs. A. P. Jones and J. D. Willis; secretary-treasurer, Dr. Claude Moore.

Drs. W. L. Whitman and S. B. Cary, both of Roanoke, were elected delegates to the Lynchburg meeting of the Medical Society of Virginia, and Drs. George M. Maxwell and W. L. Powell, both of Roanoke, were elected alternates.

CLAUDE MOORE, *Secretary-Treasurer.*

The Fairfax County Medical Society

Elected the following officers at its meeting held August 4th: President, Dr. B. H. Swain, Ballston; vice-presidents, Drs. Tom A. Williams, Washington, D. C., and C. A. Ransom, East Falls Church; corresponding secretary, Dr. O. H. Coumbe, Washington, D. C.; recording secretary, Dr. Wm. P. Caton, Fairfax; treasurer, Dr. F. M. Brooks, Swetnam. Dr. Brooks was elected delegate to the Lynchburg meeting of the Medical Society of Virginia, and Dr. George T. Klipstein, Alexandria, was elected his alternate.

WM. P. CATON, *Secretary.*

The Buckingham County Medical Society

Met on the 7th of September, and elected Dr. Jos. H. Mitchell, Dillwyn, president, and Dr. John Randolph, Arvonia, secretary.

Dr. Perkins Glover, Arvonia, was elected delegate to the fifty-second annual meeting of the Medical Society of Virginia, at Lynchburg, in October, and Dr. J. Randolph, Arvonia, was elected alternate.

J. RANDOLPH, *Secretary.*

Warren, Page, Rappahannock Medical Society

The regular meeting of this society was held at Flint Hill, Va., August 23, 1921, under the presidency of Dr. E. G. Brumback, of Luray, Va. Interesting papers were read by Drs. C. R. Dufour, Washington, D. C.; P. W. Boyd, and E. C. Stuart, Winchester, and J. H. Deyerle, Harrisonburg.

Medical Education

Medical College Merger.

TO THE EDITOR:

While not a member of the Medical Society of Virginia, permit me, if you will, to discuss briefly a phase of the Medical College Merger, not previously published in your journal.

It must first be admitted that in this agitation as to the location of the merged medical schools, dentistry and pharmacy should receive the same consideration as that accorded medicine. There is now in full operation the department of dentistry of the Medical College of Virginia, a well recognized Class A school. Anything which would interfere with the successful continuation of this school, with the same high standards, would deprive Virginia of its proper source of supply for adequately and properly trained dentists for this state. Virginia must not fail in its responsibility to the people in this respect.

It has already been stated many times that the Commission on Medical Education voted unanimously that the merged school should teach dentistry as well as medicine and pharmacy. Aside from the economic phase of teaching medicine, dentistry and pharmacy together (and it was the economy of the situation which prompted Governor Davis to send his message to the Legislature), there are classical and university advantages.

The same tendency which has characterized the affiliation of medical colleges with universities has been equally true of the dental colleges. In the first two years of the four-year course, instruction of dental students is largely the same as for medical students. How essential it is that dentistry and medicine be taught together under the same environment, since, after graduation, physicians and dentists are in intimate association of practice in ministering to the ills of the public. Surely, their education would be very much enhanced, to their mutual advantage, in a community of medical science, than would either one of the departments in the main university.

Just as there is a dearth of physicians for rural Virginia, the same condition is true of the shortage of dentists. The University of Virginia authorities have admitted on numerous occasions that a dental school can not now be established at Charlottesville. Why dismember medicine and move only the department of medical teaching to Charlottesville?

There is but one side to this agitation. All are agreed that the State of Virginia should teach medicine, dentistry and pharmacy and that they should be departments of the University of Virginia. They should all be taught together, where one will reap the benefits of the other.

Richmond, as the location, offers the only solution. Here, all the resources of the medi-

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cal art would be at the command of the University of Virginia, if it but accepts the opportunity for service offered the institution.

HARRY BEAR, D. D. S.

Secretary's Announcement

Reduced Railroad Rates to Lynchburg.

No physician attending the meeting of the Medical Society of Virginia in Lynchburg will be able to secure the benefit of the reduction in railroad rates, secured by this office, unless every physician who goes gets from his ticket agent a certificate indicating that a one-way ticket at full rates has been purchased to Lynchburg. It is necessary that 350 physicians, including dependent members of their families, shall take advantage of this reduction.

DO NOT FAIL TO GET YOUR CERTIFICATE FROM YOUR AGENT.

Medical Defense.

At this meeting of the State Society, there will be presented a brief summary of explanation of one or two other state societies in providing medical defense for physicians against suit for alleged civil malpractice. The physicians of Indiana, for example, are taking care of this problem very satisfactorily, at a cost of seventy-five cents per member, annually.

If this is a matter of any interest to you, drop a post card to the Secretary-Treasurer, expressing your approval or disapproval of such a plan for our State.

G. H. WINFREY,
Secretary-Treasurer.

The Truth About Medicine

During August the following articles have been accepted by the Council on Pharmacy and Chemistry for inclusion in New and Nonofficial Remedies:

Beebe Laboratories, Inc.:
Beebe Protein Milk
Beebe Modified Buttermilk

Book Announcements

Diagnosis and Treatment of Brain Injuries. By WILLIAM SHARPE, M. D., Professor of Neurologic Surgery, New York Polyclinic Medical School and Hospital. Octavo 757 pages with 232 illustrations. J. B. Lippincott Company, Philadelphia. Price, $8.

The development of a rational attitude toward cases presenting injuries to the skull and its contents has been one of the notable achievements of cranial surgery in recent years. Among the outstanding figures in the definition of this attitude and the successful practical application of it, Dr. Sharpe occupies a foremost position, and it is therefore singularly gratifying to get within one cover the results (and many of the details) of his vast experience. His wide acquaintance in this section, where he has visited, lectured and operated on several occasions, lends an additional personal interest to the publication.

The older conceptions of the essential status of a skull or brain injury have undergone a radical and much needed change. The fundamental error of dignifying the question of fracture of the bone as the consideration of primary importance will not longer, thanks to Dr. Sharpe and the others of his school, lead to unnecessary surgical interference or defer operations urgently required. It is now commonly recognized that on the one hand a skull crack, instead of demanding immediate operation, may actually, by releasing blood and cerebrospinal fluid, make it unnecessary; and on the other hand, that a disastrous intracranial condition imperatively calling for intervention may be caused by a head injury producing no demonstrable trauma to the brain case itself. In brief, each case must be estimated upon its merits and, when this is done, upon the principles soundly expounded by Dr. Sharpe, the expectant palliative method of treatment is found to be sufficient for two-thirds of these patients and operation is necessary in only one-third. When to this general attitude is added a judicious selection of time for intervention in those cases actually requiring it, the average mortality of fifty per cent for brain injuries is reduced to twenty-seven per cent.

In this publication, Dr. Sharpe devotes a section to a general discussion of recent advances in the diagnosis and treatment of brain injuries and follows this with a division of the remainder of the book between the consideration of (a) acute and chronic brain injuries in adults, and (b) acute and chronic brain injuries in newborn babies and children. The conclusions are based upon an experience

covering more than 1,000 cases. Not the least attractive feature of the volume is the citation in detail of a large number of these cases, together with careful autopsy studies in those terminating fatally.

J. F. G.

General Pathology. An Introduction to the Study of Medicine. Being a Discussion of the Development and Nature of Processes of Disease. By HORST OERTEL, Strathcona Professor of Pathology and Director of the Pathological Museum and Laboratories of McGill University and of the Royal Victoria Hospital, Montreal, Canada. 1921. Cloth. Pp. 357, with Illustrations. Price $5.00 net. New York: Paul B. Hoeber.

It is not overpraise to state that this work of Oertel's is one of the outstanding books of the day. Written in a style that is commendable and in the scientific spirit without which every book on the subject of pathology falls short of being in the first rank, it gives the reader a thorough interpretation of all the problems in pathology, some of which no doubt have perplexed him on account of his limited knowledge, due to the fact that he has never been fortunate enough to acquire an illuminating book on the subject.

Three reasons which should commend Oertel's work to the thousands of physicians throughout the country are: Pathological processes are regarded as expressions of physico-chemical laws; the great educational value which accrues from a study of the historic development of ideas and hence an understanding of current ideas; the visualization of possible pathological occurrences based on the anatomical conceptions of the subject. These reasons should bespeak for the book a wide circle of reader. When added to these are a simplicity of presentation and clarity of thought that are evidenced on every page, it cannot be gainsaid, in all fairness to the author, that at last the American medical profession has a book at hand that is of so unusual a nature that it must be considered a hall-mark in medicine.

P.

The Assessment of Physical Fitness, By Correlation of Vital Capacity and Certain Measurements of the Body. By GEORGES DREYER, C. B. E., M. A., M. D., Fellow of Lincoln College, Professor of Pathology in the University of Oxford. In collaboration with GEORGE FULFORD HANSON. With a Foreword by CHARLES H. MAYO, M. D., Rochester, Minn. 1921. Cloth. Pp. 128, with XXIV Tables. Price $3.50 net. New York: Paul B. Hoeber.

This book should command the attention of all physicians interested in industrial medicine, actuaries of insurance companies, public health nurses and settlement workers, for the reason that unlike most books on the same lines, the author contends that the occupation of the individual plays a large part in his physical dimensions.

In the past, insurance companies have had hard-and-fast rules as to what the physical demensions should be to make the applicant acceptable irrespective of his occupation, and the same remark applies to all those investigators of physical fitness who have followed the matter with more or less interest. Dr. Dreyer divides all workers into three classes and shows the differences in the physical measurements between Class A and Class B—men who have undergone prolonged physical training, or have an occupation which leads to muscular development, and men of the professional and business classes. Class C contains those who lead an extremely sedentary life, which it can readily be understood makes for a greater degree of under-development than would obtain among those of Class A or B.

That the theories advanced by Dr. Dreyer are sane cannot fail to be apparent at once to the physician who reads this book, and no doubt will not be long in attracting the attention of the actuaries of our various insurance companies. What with the Public Health Service and settlement workers already following the precepts laid down in this book and the strides made in industrial medicine in apportioning physical fitness on scientific lines, it will behoove all insurance companies to take into consideration, not lightly but with seriousness, the moment of a thorough understanding of the variations in physical measurements as these obtain normally in the man who does hard physical work, the man who does light physical work, and the man who leads a sedentary existence. Only in this way will insurance companies meet the problem in a just manner as to who should be accepted and who should be refused.

P.

Diseases of Children. Designed for the Use of Students and Practitioners of Medicine. By HERMAN B. SHEFFIELD, M. D., Formerly Instructor in Diseases of Children, New York Postgraduate Medical School and Hospital, and Medical Director, Beth David Hospital, Consulting Physician to Jewish Home for Convalescents and the East Side Clinic for Children. St. Louis. C. V. Mosby Company. 1921. 798 pages with 238 illustrations, mostly original, and nine color plates. 8vo. Cloth. $9.00 net.

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Virginia Medical Monthly

FOUNDED BY LANDON B. EDWARDS, M. D., APRIL, 1874.

OWNED BY THE MEDICAL SOCIETY OF VIRGINIA.
PUBLISHED BY THE PUBLISHING COMMITTEE.

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All correspondence regarding editorial matters, articles, advertisements, subscription rates, etc., should be addressed to the Journal.

All advertisements are received subject to the approval of the Council on Pharmacy and Chemistry of the American Medical Association.

Subscription Price: $2.00 per annum in advance.
Single Copies 20c.

Vol. 48. OCTOBER, 1921. No. 7.

Editorial

The Menace of the Cults in Virginia.

While all who are interested in the real progress of matters pertaining to health are congratulating themselves upon the prospect of greater public interest in medical education in the State, comparatively few know that a bill was introduced during the last Legislative session, and actually passed the Senate, the provisions of which bill would have admitted the graduates of even the lowest class medical schools to the state.

Among the news items of the present issue of the Journal appears a notice to the effect that a Chiropractor, practicing illegally in Danville, has recently been tried and acquitted. This is the second time this individual has been brought to trial with like result, notwithstanding the fact that a vigorous prosecution was made in both instances and that the instructions given the jury were a clear and definite interpretation of the law, and the proof of its violation positive.

Within the past year no less than four other similar prosecutions have been made by the Board of Examiners in the State, and, while three of these have resulted in convictions, in every instance the defendant has brazenly continued practice. There is evidence tending to show that in these prosecutions both the legal expenses, and fines of the defendants have been paid by an organization outside of the State.

We have been reliably informed that a bill is now in the course of preparation which will admit Chiropractors to legal practice in the State, notwithstanding the fact that diplomas are issued by their best schools, if their catalogues are to be relied upon, after a period of one year's study, and that no school has a course of more than three years.

If we may judge as to the prospects of the passage of this bill by what has been happening along this line, as above detailed, the probabilities are that it will become a law.

In order to place the situation squarely before the profession, the Medical Examining Board, at its June meeting, passed the following resolution, which is self-explanatory:

"Whereas, It is evident that the Chiropractic propaganda spreading throughout the United States has as its basis the placing of the large number of graduates from their short term proprietary schools, said at this time to total more than the graduates of all the reputable medical colleges of the country, and whereas a strong organization of the schools, here mentioned, and of their graduates, is apparently using every effort to push illegal practitioners into Virginia with the expressed purpose of obtaining such legislation as will lower the present medical standard, thereby admitting them to license..

Therefore, be it Resolved, That the Examining Board deems it a duty:

First. To apprise the legal practitioners of the State through the presidents of their respective organizations, and the Board of Health through its secretary, of the menace herein set forth.

Second. To call attention to the utter lack of funds necessary to effectually prosecute the number of illegal practitioners already established in the State through the agencies mentioned.

Third. To suggest that the various organizations of the State consider whether it be feasible at this time to enter into a campaign of education and publicity, such as that carried on in Ohio, Michigan, and elsewhere, in order to present to the public facts relative to the fraudulent and extravagant claims made by the organization under consideration."

While in certain localities the members of the medical profession have responded and aided in every way possible in the prosecution of the class of violators of the law under consideration, it is to be deplored that such has not universally been the case. It is not our purpose to condemn those who have not been interested in this matter, for after all they may be correct in the assumption that prosecutions undertaken under our present law serve only to advertise quackery and that it is the business of the public in general to defend itself from charlantry. There would certainly be

good ground for this position were it not for the fact that our statute has placed the enforcement of the law in the hands of the medical profession, and the profession has accepted the trust.

In the light of the above facts the question at once arises as to why the enforcement of the law against Cults is so difficult. There are two manifest reasons:

First and mainly, the Cults in general, and the Chiropractors in particular, through a most thorough system of organization, and through a persistent and systematic plan of advertisement, shrewdly gotten up, and carried on in the newspapers, by handbills, and otherwise throughout the country, patterning largely after the manner of patent medicine concerns, are able to make certain classes of the public believe that any and all diseases, from appendicitis to cerebrospinal fever, are easily curable through their simple ministrations, and that all prosecutions undertaken against them are persecutions.

Second. The bulk of the public, which is not so easily influenced, and the bulk of the medical profession, is indifferent; both shunning newspaper propaganda, and notoriety, with the result that, when cases come into court, a strong appeal is made to juries with the consequences above indicated.

In conclusion, we wish to state that the gist and purpose of this article is to set out the facts of the threatening situation, thereby placing the medical profession of the State in a position to determine for itself whether it be its duty or desire to educate the public and forestall the enactment of laws admitting a Cult whose course of study, and whose qualifications are below the standard required of Virginia medical schools and Virginia medical students.

J. W. Preston,
P. W. Boyd,
H. U. Stephenson,
Committee.

The Control of Cancer.

One of the greatest problems in medicine today is cancer. Apparently cancer is on the increase, though doubtless the increase is not as great as many statisticians would have us believe. The more accurate diagnosis and the more careful records of cases and of vital statistics have brought out many cases of cancer that were formerly unrecognized. It is bad enough as it is, for a large percentage of men and women over thirty years of age die of cancer.

The American Society for the Control of Cancer is doing excellent work. This National Society has organized many State Societies and an effort is now being made to establish a branch in Virginia. The membership is not limited to the medical profession but public spirited and intelligent laymen are desired as members. It is the duty and should be the privilege of every doctor to take a leading part in any matter that concerns the health of his patients as individuals, or the welfare of society as a whole. The State branch of the American Society for the Control of Cancer is in process of organization. The chairman of the committee for Virginia is Dr. Robert C. Bryan, of Richmond. An intensive campaign will be launched throughout the United States from October 30th to November 5th, 1921. It is earnestly hoped that every member of the medical profession and every layman who is interested in public health will become members and will aid in this splendid work of preventing disease and so saving untold misery and suffering.

In the past it has been difficult to make much progress in interesting the public in the control of cancer. Possibly one reason is because there has been no satisfactory co-operation on the part of the public press. The cancer charlatan, like the patent medicine vender, has a wide commercial influence and it is to his interest to keep the public as ignorant as possible about the nature of cancer. With the shedding of light on secret nostrums and cancer quack cures, the commercial profit from this source would dwindle into insignificance.

While the cause of cancer has not been discovered, much has been learned in recent years about the nature of malignant growths. As a matter of fact, we know very little about the cause of anything. Viewed in a wide way from a biological standpoint, there is no more reason to wonder at failure to discover the cause of cancer than the failure to discover the cause of life in any of its various manifestations. The discovery of the cause of disease by so-called specific bacteria does not account for the origin of the bacteria themselves.

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A growth on the tip of the nose, whether it be malignant or benign, is merely a part of the general biologic processes involved in the growth and existence of the body.

To be sure, there are isolated partisans of the general theory that cancer is caused by micro-organisms. Some of them are men of great ability. It is possible, too, that some such theory may eventually be proven. At present, the direct cause of cancer, like the direct cause of any benign tumor, is unknown.

Cancer seems to be an accumulation of immature cells that grow without law or order and without regard to neighboring tissues. If the cells become mature, it is no longer cancer. Cancer is always local in its early stages and it is in the early stages that a cure can usually be effected. Cancer is not contagious and does not, as a rule, cause pain.

There are many so-called pre-cancerous lesions which can be easily extirpated with a certainty of preventing cancer. There are also many habits of life which predispose to cancer. These things offer one of the most promising fields of action for the American Society for the Control of Cancer.

J. Shelton Horsley.

Prevention of Heart Disease.

A pretty, well set-up, vigorous, young married woman, approaching forty, consulted the writer recently. Her story ran about like this: Her mother died a few years ago: her death was very distressing in its details. Her mother had heart disease, and suffered for days and days with shortness of breath, and had a feeling of suffocation; she was affected with dropsy and was uncomfortable for months with this; she could not lie down; she could not sleep. Her mother had two sisters. Both of these aunts have recently died of chronic heart disease and both had the long train of harrowing symptoms. The patient wanted to know of her physician, now that she was forty, what she could do to prevent such a death for herself. She had a horror of "dying hard," this way.

How to prevent heart disease is a real problem, but not one incapable of a fair degree of solution. Like other diseases that have been overcome, heart disease can be greatly reduced in incidence and premature mortality. As typhoid fever has been greatly reduced in incidence, and as tuberculosis has been placed under a nation-wide study for its control, so the incidence of heart disease and premature death from heart disease may be attacked with a reasonable assurance of success. It is a cause for congratulation that the eradication of the exanthematous diseases and the oral infections of youth afford us a ray of hope in the search for a means of reducing the number of endocarditis cases which, healed, leave organic defects in the valvular mechanism of hearts and in this way produce "so-called" organic heart disease.

The early diagnosis of syphilis and the adequate administration of the best medical treatment, properly safeguarded by prolonged observation of the Wassermann reaction, is also a means open to modern medicine in its effort to prevent heart disease. But the public may find in the careful physical examination by competent medical advisers the most promising measure for the prevention of death by heart disease.

While, no doubt, as life advances, all the organs of the body are taxed beyond reason, either by repeated chronic undiscovered infections, by persistent and continued habits of eating and drinking or of work, the heart, probably, is the most abused and neglected of all organs. If the teeth begin to give out, the layman visits his dentist and receives skillful repair; if the eyes or ears begin to fail, he visits the specialist; if his nerves, his stomach, his lungs, his liver fail, he does what he can to correct and help the crippled organ. But if his heart is gradually losing power, gradually failing in prodigious mechanical work of making its one hundred thousand odd contractions every twenty-four hours, gradually losing its inherent reserve power, he goes heedlessly along, preferring not to know, not to be instructed in the conservation of heart power.

The prevention of heart disease of the adult life and premature death by cardio-vascular insufficiency, must lie, in its last analysis, at the door of the medical profession. The profession must teach through public press, through its health boards and civic organizations, and through its private instruction to the individual patient, the importance of careful physical examination of the heart in advancing years and the regulation of life to meet the exigencies of the heart.

News Notes

A Personal Letter to You, Doctor.

The Medical Society of Virginia holds this year's annual session in Lynchburg, October 18th to the 21st. If you are not a member you should come and bring your application. If you are already a member, then you should come and take part in the transactions of the organization that represents you, that is, handling matters directly concerning you, that is seeking the advancement of your profession, and you should certainly be here to have a voice in your own affairs and help attend to your own business.

There will be plenty to engage your attention; the program, already mailed to members, guarantees that you will be well fed up on scientific pabulum and the local committee of arrangements proposes to see that you will not otherwise hunger, if you do thirst. Read the program over, see who is coming and what's a-doing. Notice that there are so many papers that two separate sections will be held, the Medical in the Virginian Hotel and the Surgical in the Elk's Club—good places, where you can both see and hear, also be seen and heard, and those are what you come for.

Observe the names of the invited guests, international figures, men with whom you do not want to miss this opportunity to touch elbows.

Don't fail to mention to your wife, your sister, your daughter, and even your mother-in-law, that ladies are expected and will be welcomed by all and entertained by a special committee of ladies, who are busy right now making preparations for them.

Come to the Hilly City, Doc,
Come to the meeting when you feel
October's frosty shock.
Come when the musty seal
That closes the bottle's neck is broke,
And crowded cities hail the stroke,
Come in consumption's fittest form,
And bring your rubber neck along.
Come when the heart beats high and warm
With banquet song, to dance incline,
And thou art desirable!
The cheer, the pone (corn), the yell, the pail, the
beer (near),
And all we know, or dream, or fear,
Of pleasure are thine.

GEO. J. TOMPKINS,
Chairman Local Committee Arrangements.

Are You Going to the Lynchburg Meeting?

We are hoping for a large number of answers in the affirmative to this question, which should now be uppermost in the minds of all members of the Medical Society of Virginia. With the programs recently sent each member were enclosed cards from the local committee of arrangements. They wish you to advise whether you may be expected to attend or not.

Under the heading of *Secretary's Announcement* in this journal, will be found a notice with regard to reduced railroad fares for this meeting. Such of the component societies, as have not sent names of their delegates to this office, should see that they are represented at the State meeting and send credentials with their delegates when they start for Lynchburg.

At the time of going to press, names have been sent us of the following doctors who will attend as delegates from the Medical Society of the State of North Carolina: Drs. B. C. Willis, Rocky Mount; C. V. Reynolds, Asheville; James B. Bullitt, Chapel Hill, and G. Grady Dixon, Ayden. Other states may later send names of delegates.

A large number of reservations have been made and an unusually large attendance is anticipated. Many interesting matters are to be discussed. Be sure to attend and have members of your family accompany you.

Southern Medical Association.

The fifteenth annual meeting of the Association will be held at Hot Springs, Ark., November 14-17, under the presidency of Dr. Jesse L. Crook, Jackson, Tenn. Headquarters will be Eastman Hotel. A reduced railroad rate of one and one-half fare for the round trip has been secured for those who attend. This will be worked on the certificate identification plan. If you propose to attend this meeting, write at once to Association Headquarters, Birmingham, Ala., and secure your certificate.

Among the many pleasant features planned for this meeting, apart from the scientific program, will be a golf tournament for the medical championship of the South. Dr. E. R. Smith, who is chairman of the golf tournaments, requests that entries be sent him at the earliest possible moment, to Dugan-Stuart Building, Hot Springs, Ark., for (a) Championship of the South—18 holes low medal score: (b) Handicap championship. All play-

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ers are requested to obtain their handicap from home club and present it with par score for home course. Play for handicap championship will be at the same time as the championship round. If it is possible, four-men teams from various clubs or cities will decide the Southern team championship.

Public Health Service Institutes.

In view of the great success of the Institute of the Public Health Service, held in Washington last December, and of the difficulty, due to the conflicting dates of other meetings, of arranging for another on the same scale this fall or winter, the service some time ago decided to try to meet the insistent nation-wide demand by arranging a series of Institutes to be held in the larger widely scattered cities of the United States. Locations and dates were so arranged that at least two or three of the meetings should be held within reasonably convenient reach of nearly every resident of the country; and a tentative schedule of courses and of speakers was mapped out. The plans were promptly adopted by many cities, with some variations to meet special local needs. In most cases the Institutes have been planned to run for a week.

The basic courses include from three to six lectures on tuberculosis, child hygiene, nutrition, clinics, and health centers, communicable diseases, non-communicable diseases, industrial hygiene, sanitary engineering, administrative problems, mental hygiene, medical social work, syphilis, gonorrhea, protective social work, and the delinquent. Single lectures will also be given on special occasions. Two Institutes, those at Hot Springs and Chicago, will be devoted especially to venereal diseases. The lecturers who will speak at some or all of the gatherings are the best available in their particular lines in the country.

The Virgina State Dental Association

Has extended a cordial invitation to all members of the Medical Society of Virginia to attend its annual meeting in Richmond, October 11-14, inclusive, at the Jefferson Hotel.

The American Public Health Association

Is to have its semi-centennial celebration in New York City, November 8-18, 1921. Important features of this meeting are the scientific sessions to be held November 14-18, on many public health matters; the health institute, November 8-12; Dr. Stephen Smith, the founder and first president of the Association, who is now in his ninety-ninth year, will be the guest of honor at a banquet to celebrate his approaching centennial and the semi-centennial of the association; and a historical jubilee volume, Fifty Years of Public Health, which was issued about the first of October. Detailed information, etc., may be had upon addressing the Association, at 370 Seventh Avenue, New York City.

Some Richmond Doctors Who Are Home Again.

Dr. and Mrs. J. Allison Hodges are home again after spending the late summer season in the mountains of North Carolina.

Dr. and Mrs. D. D. Talley spent a vacation at Atlantic City.

Dr. M. C. Sycle recently spent a short time attending clinics at Bellevue Hospital, New York City.

Dr. Sidney Trattner returned home about the middle of September, after spending some time in New York and Atlantic City.

Dr. Beverley R. Tucker is home again after a trip to New York. He went as the representative from Virginia, under appointment by Governor Davis, to attend the International Eugenic Conference, at which there were representatives from the United States, England, Belgium, Norway, Sweden, France and other countries.

Dr. and Mrs. Frank Lord, with some friends, took a motor trip in September, visiting several northern cities and Canada.

Dr. and Mrs. Thos. D. Jones were guests of friends in Louisa, Va., last month.

Dr. Hugh J. Hagan,

Roanoke, Va., was a recent visitor in this city.

Dr. H. M. DeJarnette,

Fredericksburg, Va., was recently elected a member of the health board of that city. Two women were also elected as members.

Dr. W. D. Macon

Was recently elected a member of the Charlottesville, Va., Health Board. A woman was also elected a member of the board in this city.

Peking Medical College Opened.

The new Peking Union Medical College, the most complete institution of its kind in the East, was opened the middle of September, the dedicatory exercises extending over the week of September 15-22. Although representative medical men from London, Paris,

Toronto and Tokyo were present, by far the largest number of those participating in the exercises were from America.

Dr. Robert A. Gamble

Has returned to his home in Petersburg, Va., after taking up some special work at Johns Hopkins Hospital, Baltimore.

Dr. E. A. Waugh,

Of Lynchburg, Va., returned home early this month after a vacation of a month spent in Canada.

Government Fighting Venereal Diseases.

In the past two years, the U. S. Public Health Service, in co-operation with the various state boards of health, has made very material progress in organizing a program for combating venereal diseases. There have been 427 clinics established. Of 185,000 clinic patients receiving treatment, 41,100 have been discharged as non-infectious.

From July 1, 1918, through June 30, 1920, there were eleven clinics held in Virginia, at which 10,099 patients received treatment. The Virginia clinics have discharged 4,500 patients as no longer infectious. By the operation of a $5,000 industrial clinic installed by the Du Pont de Nemours Company, at their Hopewell powder plant, it is estimated that $150,000 has been saved in increased efficiency.

Dr. and Mrs. Hugh McGuire,

Alexandria, Va., were recent visitors in Richmond.

Dr. Jas. Wood Jordan,

Of the U. S. Public Health Service, has recently been visiting his old home in Ashland, Va., before leaving for New Mexico, where he is now to be stationed. Mrs. Jordan will accompany him. He was recently stationed at Asheville, N. C.

Dr. Moreland R. Irby,

Formerly of Lankin, North Dakota, has located at 200 West Grace Street, this city, where he will limit his practice to eye, ear, nose and throat work. He was a graduate of the Jefferson Medical College in 1908.

Dr. A. L. Wilson

Returned to his home in Lynchburg, Va., the middle of September, after a vacation spent at Siasconset, Mass.

Superintendent at Blue Ridge Sanatorium.

Dr. William Edward Brown, former first assistant to the director at Catawba Sanatorium, has been appointed superintendent and medical director of the Blue Ridge Sanatorium, near Charlottesville, Va. He succeeds Dr. Walter C. Klotz, who resigned to accept a similar position at Johnson City, Tenn. In addition to his work at the Sanatorium, Dr. Brown will also instruct students of the medical department of the University of Virginia in the diagnosis and treatment of diseases of the chest.

Dr. Brown, who is a native Virginian, graduated from the Baltimore Medical College and has been engaged in tubercular work for the State Board of Health and for the State Tubercular Association for the past several years. During the war Dr. Brown was an instructor in the army tubercular camp at New Haven, Conn., and studied under some of the most noted tubercular experts in the country. His wide experience and the reputation he has gained by his work throughout the State, notably in diagnostic clinics, eminently qualifies Dr. Brown as the head of this important institution.

Dr. Voshell Heads Orthopedic Department at University of Virginia.

Dr. Allen Fiske Voshell, former resident orthopedist at Johns Hopkins Hospital, Baltimore, at the opening of the present session, assumed charge of the department of orthopedic surgery at the University of Virginia Medical School and Hospital. The addition of Dr. Voshell to the University's staff of surgeons will greatly increase the facilities of its medical school and hospital in caring for the crippled children of the State.

Dr. Voshell is an academic and medical graduate of Johns Hopkins University and specialized in orthopedics under Dr. W. S. Baer, eminent Hopkins orthopedist. He served with the Hopkins Hospital unit in France and since the war has been resident orthopedist at Johns Hopkins Hospital.

Public Health Work of the Red Cross.

Since the American Red Cross entered the field of public health, at the close of the war, it has established 260 health centers, appointed 1,335 public health nurses, given courses in home hygiene and care of the sick to more than a quarter of a million women and girls, and organized nutrition classes and hot school lunches for undernourished children, and courses in food selection for the mothers. Dur-

ing the past eighteen months it has brought relief to the victims of seventy disasters. Its first aid and life-saving work is being expanded.

For all this work the Red Cross needs the support of the American people. It is asking that support through the fifth annual Roll Call, to be held November 11-24. It is asking you, and a hundred million other people in this country like you, to give one dollar to help carry on the work. Isn't it worth a dollar to know that you are doing your share?

Dr. N. E. McDannald,

Until recently of News Ferry, Va., announces that his postoffice is now Halifax, Va.

Dr. and Mrs. H. Graham Stoneham,

Waverly, Va., were visitors in Lancaster County, Virginia, during September.

The Electrotherapeutic Association,

At its recent meeting held in Washington, D. C., elected Dr. Virgil C. Kinney, Wellsville, N. Y., president; Drs. Willard Travell and A. Bern Hirsh, both of New York City, treasurer and secretary, respectively.

Tonsil-Adenoid Clinics.

As the outcome of the work of the community nurse, two tonsil-adenoid clinics were held in Buena Vista, Va., on September 3 and 17. The services of Dr. George J. Tompkins, Lynchburg, were secured as operator, and he was assisted by Dr. E. P. Tompkins, of Roanoke, and a staff of nurses from Lynchburg, Lexington, and the community nurse of Buena Vista. The local doctors assisted in every way to make the clinics a success by administering anesthetics, after care of patients, etc.

Twenty-three patients were operated on during the first clinic and thirty at the second. As a tribute to the skill of the operating surgeon, it was noted that there were no ill effects resulting from the operations.

Permanent T. B. Clinic in Petersburg.

As a result of the recent demonstration conducted in Petersburg by the Virginia Tuberculosis Association, with the co-operation of the State and City Boards of Health, a permanent tuberculosis clinic will be established there. In the 1,124 persons examined, seventy-one suspicious cases were detected and a number of other cases in various stages of the disease. In addition to these a number of other physical defects were found which might be readily remedied, if taken in time.

Chiropractors not Required to Secure Certificates.

In a case tried in the Danville Corporation Court in September, the jury decideed that chiropractors should not be required to secure certificates from the State Board of Medical Examiners, the defense suggesting that they did not practice medicine in the strict sense. The judge further instructed the dismissal of a case against a man who operates a cancer hospital in that city, who is not a regular practitioner in accordance with requirements of the State Board.

In view of these decisions, it seems apparent that something should be done to protect the people against violations of the Medical Practice Laws of the State. This is brought out in a report published in our editorial column, under the caption of "The Menace of the Cults in Virginia."

U. S. Hospital At Yokohama to Close.

It is understood, though not authoritatively stated, that the U. S. Naval Hospital, at Yokohama, Japan, is to be closed for the sake of economy. There have been few patients treated at the hospital in recent years and it has been maintained more as a matter of sentiment. This hospital was established there fifty-three years ago and is situated on a bluff overlooking the business section of the city on one side and the Bay of Tokyo on the other. The only other nation which has a hospital at Yokohama is Great Britain, and its hospital is near the American institution.

Dr. and Mrs. D. J. King

Have returned to their home in Williamsburg, Va., after a visit to relatives in Loudoun County, Va.

Shriners to Build Hospitals for Crippled Children.

Nobles of the Mystic Shrine have planned to establish throughout the United States nine free hospitals for crippled children. For this purpose $2,000,000 has been pledged, each Shriner being assessed $2 annually for building and maintenance of the institutions. It was at first proposed to erect a very large hospital in St. Louis, but it was later decided to "take the hospitals to the children" and to establish a $300,000 hospital in St. Louis, and $200,000 hospitals in eight other cities throughout the country. The places already selected for hospitals are Shreveport, San Francisco, Portland, Ore., St. Paul, Minneapolis and

Montreal, Canada. Locations for the other three will possibly be in Virginia, the New England States, and Central Pennsylvania.

National Guard Assignments.

Among those recently appointed and assigned to duty with the Virginia National Guard are Dr. Giles B. Cook, of Front Royal, as Major of the Medical Corps, Virginia National Guard, with the 2nd Provisional Infantry, and Dr. James R. Gorman, Lynchburg, as Captain Medical Corps, and assigned to duty with the First Infantry, both to fill original vacancies.

In Danville, Va., Dr. H. A. Wiseman was appointed Major of the Field Hospital Unit, with Dr. Clyde L. Bailey as one of the captains.

Chesterfield Democrats Appoint Physicians on Committees.

At a recent meeting of the Chesterfield County, Va., Democratic Committee, Drs. J. B. Fisher, Midlothian, A. J. Hurt, Chester, and C. M. Hazen, Bon Air, were appointed members of the precinct committees.

Married—

Dr. Junius Francis Lynch and Mrs. Harvey Laird Wilson, both of Norfolk, Va., September 10.

Dr. Raymond A. Vonderlehr, Richmond, and Miss Mary Rich Truitt, of Northumberland County, Va., October 11.

Dr. Waller Nelson Mercer, formerly of this city, and Miss Alice Rogers, of West Roxbury, Mass., October 8.

Society of Anesthetists.

Plans are under way to organize a Southern Society of Anesthetists at Hot Springs, during the coming session of the Southern Medical Society there, November 14-17.

This rapidly growing and now fully recognized specialty has had no Society devoted to its welfare and advancement in the South, while for some years such aggressive and wide-awake organizations as the Interstate Association of Anesthetists, American Association of Anesthetists, and others, are developing the specialty in other sections of the country.

Those interested in such an association are requested to communicate with Dr. W. Hamilton Long, 1922 Deer Park Ave., Louisville, Ky., organization secretary.

Dr. John K. Richardson,

Of the 1921 class, Medical College of Virginia, has located in this city and is assistant to Dr. Thomas W. Murrell.

Dr. B. B. Wheeler

Returned to his home in Clifton Forge, Va., the latter part of September, after a business trip to Charleston and Beckley, W. Va.

Marshall Lodge Memorial Hospital.

On October 1, the cornerstone was laid for the Marshall Lodge Memorial Hospital, Lynchburg, Va., under the auspices of the Grand Lodge of Masons of Virginia. One section of the new hospital, formerly the Home and Retreat, is about completed. The building is to cost about $250,000.

Dr. Robert Whitehead,

Meherrin, Va., was the recent guest of relatives in Amherst, Va.

Delegates to American Legion Meeting.

Drs. W. K. Vance, Jr., Bristol, Va., and Chas. E. Dyer, Pulaski, Va., were delegates from their posts to the annual convention of the American Legion, Department of Virginia, in September.

Dr. Vance was also elected delegate from the ninth congressional district of Virginia to the national convention, which was scheduled to meet in Kansas City, Mo., in October.

Dr. J. R. Cain,

Recently of Portsmouth, Va., has gone to Robertsdale, Pa.

Dr. Susan A. Price

Announces that she has left Farmville, Va., and is now at Williamsburg, Va.

Dr. Arthur S. Brinkley

Announces removal of his offices to 307 Professional Building, this city.

Dr. Henry T. Miller,

Washington, D. C., announces the removal of his offices to the Medical Science Building, 1029 Vermont Avenue, Northwest.

Dr. Harris H. Vail,

Of the class of '17, Medical School of Harvard University, announces that he is associated in office and private hospital practice with Dr. Derrick T. Vail, at 24 East Eighth Street, Cincinnati, Ohio.

Dr. R. B. Davis,

Holdcroft, Va., has been appointed one of the brigade commanders for the meeting of the Virginia Division, Sons of Confederate Veterans, which holds its annual meeting in Charlottesville, this month.

Dr. F. G. Anderson,

Who was formerly connected with Catawba Sanatorium, has succeeded Dr. Brown as assistant at that Sanatorium.

Surgeons Wanted for U. S. Public Health Service.

Examinations of candidates for entrance into the regular corps of the U. S. Public Health Service will be held November 14, 1921, at Washington, D. C., Chicago, Illinois, and San Francisco, California. Candidates must be between twenty-two and thirty-two years of age, and graduates of reputable medical schools. They must pass satisfactorily oral, written and clinical tests before a board of medical officers. Successful candidates will be recommended for appointment by the President, with the advice and consent of the Senate.

Requests for information or permission to take this examination should be addressed to the Surgeon General, U. S. Public Health Service, Washington, D. C.

Good Location.

A four to five thousand dollar practice free to purchaser of fine house, at eighty-five per cent of its value. In up-to-date town. Practice can easily be increased and can use auto all the year. Leaving for two years' post-graduate work in October. It will require $5,000 cash to handle the deal. This will make a very good location for any specialist where a large hospital is not necessary for his work. Address, "Physician," care this journal.—(Adv.)

Position Wanted as Laboratory Technician.

By young lady with knowledge of laboratory work, blood chemistry, and some bacteriology. Willing to do private or hospital work. Address "V. M.," care this journal.—(Adv.)

Obituary Record.

Dr. Edward McGuire,

A widely known and beloved physician, died at his home in Richmond, after an illness of three weeks. He had suffered from heart trouble for some time. Dr. McGuire was sixty years of age and was a native of Clarke County, Virginia. He graduated in medicine from the University of Virginia in 1886 and later took a post-graduate course at the New York Polyclinic. Upon graduating, he located in Richmond, where he had since made his home. He was a member and ex-president of the Richmond Academy of Medicine and Surgery and had been a member of the Medical Society of Virginia since the year of his graduation. He was also identified with numerous medical societies throughout the country. He was connected with the University College of Medicine throughout its career and, upon consolidation of the schools, became a professor in the Medical College of Virginia. At the time of his death, he was emeritus professor of clinical medicine in this institution.

He is survived by his widow, who was Miss Mary McGuire, a daughter of the late Dr. Hunter McGuire; by one son, Dr. Hunter McGuire, who has recently located in this city, and by a sister. Practically all of Dr. McGuire's professional work was as a "family" physician and there are many friends among his clientele, as well as throughout this State, who will feel his loss keenly.

Dr. William A. Strother,

Whose home was just outside of Lynchburg, Va., was shot and killed at his home, on the morning of September 24. He had a large practice in Bedford County. Dr. Strother was thirty-eight years of age and graduated in medicine from the University of Virginia in 1905. He had for some years been a member of the Medical Society of Virginia.

Dr. Richard Addison Powell,

Who graduated from the University College of Medicine, Richmond, in 1907, and later served an internship at St. Luke's Hospital, this city, died at Johore Bahru, India, August 14, aged thirty-seven years. To the time of entering the British R. A. M. C., during the World War, he was connected with the staff of Highsmith Hospital, Fayetteville, N. C. At the time of his death he was connected with the staff of the English Hospital, at Johore Bahru, with the rank of major.

Dr. J. F. Wright

Died at his home in Keezletown, Va., June 26, 1921, at the age of sixty-eight years. He graduated from the College of Physicians and Surgeons, Baltimore, in 1876, and was for some years a member of the Medical Society of Virginia.

Dr. John D. Smith,

Of Miller School, Va., died August 19, at the age of seventy-one years. He was graduated from the University of Maryland, School of Medicine, in 1874 and had served forty years as physician to Miller School, Va.